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PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, JANUARY 6, 1872.

[Number 1.



NOTES OF TRAVEL IN ALAMEDA CO.

[By our Traveling Correspondent.]

Alvarado.

This thriving little village of five or six hundred inhabitants, is located on Alameda creek, about ten miles south of the county seat, San Leandro, and five miles from the bay of San Francisco, in the district of overflowed lands mentioned in my last letter. The principal occupation of its inhabitants has been the collection of salt, which forms in large quantities on the overflowed lands of this section. Some fifteen or twenty companies are engaged in the business, and their works extend from opposite San Leandro to this point, a distance of 10 or 12 miles. From 12,000 to 15,000 tons are gathered annually. But another industry has sprung up in their midst, and by the efforts of one single company, the eyes of the entire manufacturing interests of the State are looking upon it with more or less jealousy; it is

The Alvarado Beet Sugar Manufactory,

erected about one year ago, at a cost of \$170,000, including 300 acres of land; all of which was in beets the past season. This company had about 250 acres additional in beets the present season, upon leased land. The average crop of the sugar beet per acre in this section is 12 tons, worth about \$4 per ton at the factory. Some 70 men are engaged at the manufactory, and about 100 more in the field.

This institution worked up last year 6,000 tons of beets, and this year, up to November 1st, 3,200 tons. The works of this sugar manufactory are run by three engines, of a combined power of 100 horses, and five additional boilers, of 40-horse-power, for making steam for miscellaneous purposes. At this writing they have on hand 3,000 tons of beets, and are increasing their stock every day. Messrs. Miller & Lux have 350 head of cattle here, fattening for slaughter, being fed almost exclusively on the pulp of the beets (after the sugar is extracted), mixed with a little hay or straw. Cattle fattened by this method, I understand, give general satisfaction.

The Town

of Alvarado has two hotels—the Brooklyn House, kept by Messrs. Nawert & Fuller, and the Alvarado Hotel, by J. F. Meyers. There are several fine stores, and one manufactory of agricultural implements, carriages, wagons, etc., carried on by Jos. McKeown, Esq., employing from six to twelve men regularly. Mr. McK. is also proprietor of the patent right of this county of the celebrated patent "Self-opening Gate," and manufactures the same to order.

Productive Ranch.

Jos. Ralph, the possessor of 100 acres of land one mile east of Alvarado, has three acres of the same in orchard, the trees of which are set 20 feet apart, with a gooseberry bush between each tree. From this little patch he last year sold \$515 worth of gooseberries, 175 boxes of quinces, and 500 boxes of apples. This year he marketed 10,000 pounds of gooseberries, and from 36 acres reaped 1,050 sacks of wheat; six acres of carrots averaged 30 tons per acre; his corn crop was light. Last year he rented a portion of his ranch for raising sugar beets, at \$25 per acre.

Mount Eden.

This place, situated midway between Alvarado and San Lorenzo is at present a town of no marked importance, containing not over 100 inhabitants; however, two stores and one hotel manage to do a paying business. The hotel bearing the same name as the village, is kept by George Ludwig, who is also general agent for S. Murphy's Express, running through this region.

San Lorenzo

Is one of the successful and flourishing towns of this county, surrounded by fine farms, with some of the most splendid private residences in the State, among which we may mention those of C. W. Hathaway, Wm. Meek, E. T. Crane, etc., costing from \$10,000 to \$50,000 each. The town has about 400 inhabitants, several fine stores, one good hotel and one extensive manufactory of

Agricultural Implements,

owned and carried on by H. Smyth, who employs regularly from 12 to 15 men in the manufacture of all kinds of plows, cultivators, harrows, etc., and I might add, the manufacture of a side-hill plow of his own invention. The works of this manufactory are run by steam. Of the salt works, which extend along the bay, in this county,

as mentioned above, one of the most extensive is that of

Chisholm & Co.,

Which is situated about three miles west of this place, and three-fourths of a mile south of Robert's Landing. This institution was established in 1857, and has a capacity of manufacturing during the season (5 months) 3,000 tons. Last year 2,200 tons were manufactured; and profiting by past experience, each year gives them a finer quality of salt. During the season, 10 men are employed. A new and substantial wharf has been erected at this point, which has a depth of five feet at the moorings at low tide. Another establishment of the same kind with nearly equal capacity, is that of D. Pestdorf, situated two miles south of San Lorenzo. From May to October last year, he manufactured 3,000 tons. This article wholesales in this vicinity at \$1.50 per ton, and is worth at wholesale \$4 in your city.

Fruits and Berries.

Adjoining the town of San Lorenzo, Hon. E. T. Crane has 60 acres, 35 of which are in orchard, consisting of a well selected variety of fruit trees. The balance of this little farm is in pasture and corn. A few acres planted in the latter cereal yielded this year 100 bushels per acre. The yield of the fruits for the season sum up as follows: 3,000 boxes of apples, 1,000 boxes of pears, 1,000 boxes of peaches, apricots, plums and prunes, 48 tons of currants, and 6 tons of cherries. From 3 to 30 men are regularly employed.

Large Farm—Fine Improvements.

Situated three-fourths of a mile east of San Lorenzo are the improvements and private residence of Wm. Meek, Esq. His possessions consist of 2,000 acres in this vicinity, and 200 acres elsewhere in the county. He farmed last year 900 acres, and will this year have 1,200 acres in wheat and barley. He raised last year 6,500 cents of wheat and barley, besides mowing 50 acres for hay. The balance of the farm, not tilled by himself, is rented to the Sugar Beet Company, at a rental of \$20 per acre. Mr. M. has a very fine young orchard, from which he has laid by this season, 2,400 boxes of winter apples. To judge of the extent of the improvements upon this farm, 8,000 days labor were performed last year. From 15 to 20 men are regularly employed. His fine improvements consist partially of a \$20,000 house, \$4,000 water tanks, and a \$1,000 fountain. This gentleman is a lover of fine stock and has some of the finest horses in the county.

Extensive Nursery.

The San Lorenzo nursery, owned by the Lewelling Bros., is situated one and one-half miles east of San Lorenzo, and about four miles south of San Leandro; and consists of 117 acres, all in orchard. This nursery has lately been removed to another piece of land adjoining San Lorenzo, and contains 30,000 or 40,000 trees, 23 acres being occupied in that department. These gentlemen are acknowledged to be the largest growers of currants and cherries in the country, and among the largest of apples, pears, plums and prunes.

Haywards.

This beautiful little village is situated six miles southeasterly from San Leandro, and contains between 500 and 600 inhabitants. Owing to its geographical position and its railroad communication with your city, it has become a cattle and grain centre for a large area of country, in the vicinity. The town is accommodated with three good hotels. The American Exchange, one of the three, is driven by that prince of hotel keepers, Tony Oakes, who not only has a good baritone voice and plays the guitar, but sets a first-class table. There are an abundance of livery stables, the principal one of which is run by Smalley & Stratton. Good turnouts and reasonable prices are their motto. A. Collins is the principal merchant, and deals in every variety of dry goods, Yankee notions, boots and shoes, groceries, crockery, hardware, etc.

Flouring Mill.

P. C. Heslep is the proprietor and manager of the above named institution at this place. It is run by a steam engine of 40-horse power, has three run of burrs, and has a capacity of 120 barrels in 24 hours. It is in operation seven months of the year. Their specialty is ground feed, corn, rye, buckwheat, and Graham flour. From four to five men are regularly employed. The flour manufactured at this mill gives general satisfaction in this vicinity. John Booken, Esq., is the brewer at this place, and manufactures annually 2,000 barrels of beer.

Robert's Landing.

The property of Wm. R. Roberts, Esq., is situated three and a half miles south of

San Leandro, on the edge of San Francisco Bay, and is approached by a fine turnpike road, and is one of the principal points, through which the products of this county pass to your city. The steamer Ellen, 100 tons burthen; also the property of Mr. R., plies between here and your city, daily. One of the warehouses at this point is 50 by 316 feet, and the two others are 50 by 100 each, and are used for storing cereals. There is also a hay warehouse 60 by 100 feet. The warehouses have a capacity of storing 7,000 tons of grain, and contain, at this writing, 60,000 sacks of wheat, besides corn, oats, beans and salt. Of the latter, 12,000 tons are now on hand, stored under cover, but not in warehouses. Freight from here to your city is \$1.50; distance 18 miles.

San Leandro.

The county seat of this county, contains about 500 inhabitants, and is situated seven miles south of Oakland. It is a pleasant rural town with many handsome private buildings, but has no hotel of prominence at present; the Enstidillo House having closed some months since, restaurants and private houses accommodate the traveling public. Stores, groceries and livery facilities are, however, very complete.

Sweepstake Plow Company.

One of the most complete and largest manufactories of improved gang and single plows in the State is located in this place. The works are the property of Messrs. Baker & Hamilton of your city, and are carried on under the management of J. Kindelberger, Esq. They consist of a building 70 by 125 feet, and were started in 1870, by J. W. Sursa, Esq. They manufactured this season 700 Sursa gang plows, besides other agricultural implements. Forty-three men find employment in the different departments, as blacksmiths, machinists, moulders and wood workers.

Trees and Plants.

It will be seen by an advertisement published in the appropriate column, that Arthur Fleming has added to his already extensive business, the agency for the sale of trees, plants shrubs, etc., grown at Oak Shade Nursery, Davisville. He is also constantly receiving an assortment of garden seeds, of the best description, at his drug store on Davis street, San Leandro. Fleming's establishment has become one of the indispensables of the place, and he has well earned the large patronage he receives. Mr. F. is also the agent of Wells, Fargo & Co., and carries on an extensive news business.

Fine Poultry.

One of the custom house officers of your city, W. Ford Thomas, Esq., who makes this place his private residence, has about two acres, neatly fitted up for the especial purpose of raising fine poultry, and has on hand at present about 250 full-blooded light and dark Brahmas, Houdans, Buff Cochins and Partridge Cochins. Several of his male Brahmas weigh 16 lbs. on foot. Mr. Thomas is in receipt of orders for nearly all the eggs and young poultry that he can supply. Success to his enterprise, as he has probably spent more money in importing fine poultry than any man in the State.

L. P. Mc.

[To be continued.]

Letter from Nell Van.

EDS. PRESS:—Do not think me ungrateful for being so negligent in responding to your kindness in forwarding to me, weekly, your most valuable paper. If I ever valued it when in my Santa Cruz home and longed for its arrival each week, how much more do I appreciate it now, and read it with a glow of pride and satisfaction, as a growth of our loved California.

This visiting among friends not seen for twenty years, is so exciting and engrossing of both time and thoughts that I have been unable to accomplish anything with my pen, above a few random sketches of my surroundings to the friends on the Pacific. But to assure you I feel an interest in you still; I write a short letter.

To those who have ever called New York home, how familiar are all its peculiarities. Yet many are the changes in its fine public buildings, parks, etc., which delight and astonish one.

The Grand Duke has been lionized and the newspapers have teemed with his wonderful reception. The Tammany frauds are undergoing investigation, and now the chief excitement seems to be the illness of the Prince of Wales.

San Domingo.

I heard Fred Douglas speak in Steinway Hall, last night, on San Domingo and its annexation to the United States. He pictured

in glowing terms the fertility of her soil, the condition of her inhabitants and the advantages to be gained by annexation. "If," said he, "it was a benefit to annex Alaska for the small consideration paid, how much greater the advantage of annexing San Domingo and its genial climate, which can be had for nothing." A lady who sat near me said that two of her sons had spent some time on the island of San Domingo and they had always resolved to go there to settle sometime in the future. Mahogany trees are abundant, and coffee plantations can be bought for a dollar an acre! The climate is mild, but not debilitating as some of the islands in the tropics are represented to be. It is but three days sail from Florida, and all that Americans need there is society, which they should endeavor to take with them.

The Grand Depot

Is completed and occupied by the different railroad trains coming into New York from the north. It is said to occupy six acres of ground, though the present building incloses but two and a half acres; the remainder is used for various purposes connected with railroad interests. One can scarcely imagine a finer building than the one above mentioned. Much dissatisfaction is felt, however, by the residents of the northern part of the island above Forty-second street, where the depot is situated, on account of the numerous accidents which have occurred since the locomotive trains are allowed to pass through Fourth Avenue to the depot. Eleven lives were lost during the first two weeks, and the suggestion to sink the depot below ground has been made, which many urge should have been thought of before its erection.

Great preparations are being made every where for Christmas. The stores are gay with toys and holiday gifts, and the florists display their wealth of Christmas greens arranged in various devices. New York is a great place, indeed, but with all its grandeur and beauty, it can never quite surpass our charming California towns with their wealth of climate and peaceful homes.

NELL VAN.

New York, Dec. 13, 1871.

Eureka Lakes.

Were the reader traveling in Nevada County, climbing up the hills and pausing in the gorges to take a drink from a dancing streamlet, then on again up among the increasing boulders and cañons, a surprise would burst upon him in the shape of a group of Lakes—twenty-four in all—clustering around each other like the setting of a cluster-ring, and more beautiful in appearance than all the diamond clusters in the world.

Twenty-four—the largest only three miles long and scarcely a mile wide—all sizes and shapes, set in the hills with such a variety of scenery that one hardly knows where to look first, or what particular point to admire most. Pines and oaks ornament the strips of land between them, while a numerous variety of gorgeous towering shrubs, such as the wild lilac and manzanita, perfume the clear air with an exquisite fragrance. There is nothing particularly marked about any one of these Lakes, but the entire group of waterlets (if we may coin the word) presents a remarkable scene to the eye. They are situated in the eastern part of Nevada County, and ought to be one of the fashionable resorts of the State.

Nothing so really lonely and unique can be found elsewhere on the coast as this group of twenty-four pure-water Lakes; at a distance some of them look as if one's arms could span them—

"So wondrous wild, the whole might seem
The scenery of a fairy dream."

From any approach they seem to smile a welcome, and they really possess the look of "intelligent nature." If "the air hath voices," Eureka Lakes have smiles, and countenances that seem to change in a variety of sweet expressions as one changes position.

The smallest appears from a distance like

"A narrow inlet, still and deep,
Affording scarce such breadth of brim
As served the wild duck's brood to swim;
Lost for a space through thickets veering,
But broader when again appearing."

Another, but a trifle larger, hemmed in with flowering shrubs, its quiet face reflecting the shadows of the clouds; then still another, sparkling with glimmering rays of sunshine that rest in silver lines across it from shore to shore. And so we may spend days among them, hardly knowing which to admire the most, and wonder if other lands can have anything more lovely.—Lisle Lester.

MECHANICAL PROGRESS.

Steel for Locomotive Boilers.

The Railway Master Mechanic's Association, at New York, recently sent out a series of questions to the various master mechanics of the country, requesting answers. Eleven questions, in all, were sent out, the first of which was:—"Do steel boiler plates, as now manufactured, have the proper degree of hardness, or should they be softer and more ductile?"

The answers to this query were, on the whole, unfavorable to the use of steel; the great objection being that when used in the form of fire-box sheets, such sheets are liable to crack. If they are to be flanged, much care must subsequently be taken in annealing them.

To the 2d question:—"Do you advise the substitution of steel plates for iron in the outside shells of locomotive boilers?"

Very few favored the use of steel, because when it is so soft as to be suitable for such purposes it is so little stronger than iron that the plates cannot safely be made thinner; and as steel costs twice as much as iron there would be loss incurred in using it. Steel in tube sheets, however, appears to stand very well and to give good satisfaction. Steel rivets are never used.

The 8th query was as follows:—"If manufacturers will supply material of the required size, would you advise making the cylindrical part of the boiler in one piece, extending from the smoke-box to throat sheets?"

In answer to this, all the replies, with a very few exceptions were in favor of making the barrel of the boiler of a single sheet, provided sound material of the necessary size could be furnished.

9th. "Have you used steel flues; if so do you prefer them to copper or iron." No one appears to approve of the use of steel boiler tubes. They are condemned for the reason that they will not caulk as well as iron.

The above are the chief points of interest sought for. Thirty-three answers were received from the master mechanics of as many of the principal railroads of the country.

MINERAL COTTON.—At the last meeting of the Franklin Institute, says the *Journal of the Franklin Institute*, Mr. Coleman Sellers exhibited a sample of a material which is now for the first time to be manufactured and applied to useful purposes in the arts.

The product possesses a general resemblance to cotton, for which it may doubtless in certain cases be substituted with advantage, but on closer examination seems more like spun glass, which in reality it is. It is formed by allowing a jet of steam to escape through a stream of liquid slag, by which it is blown into the finest threads, sometimes two or three feet in length. These threads, though somewhat elastic, readily break up into much smaller ones, and, the color of the substance being white, the appearance of a compacted mass of it makes the name under which it has been described a very appropriate one. The admirable non-conducting property of the material for heat, as well as that of the great quantity of air which it retains in its interstices, would seem to fit it very well for a non-conducting casing to steam-boilers and pipes, an application for which it is at present being tested.

ARTIFICIAL SAUSAGE SKINS.—During the recent war in Europe, so great was the demand for sausage skins that recourse was had to a substitute. The Berlin pea sausage factory for some time consumed daily a hundred thousand skins; but soon the supply began to run short; parchment paper was suggested as a substitute. The difficulty in the use of this material was to paste the edges of the paper containing the sausage together, ordinary paste being useless for this purpose. Dr. E. Jacobsen, however, prepared a paste which kept the edges firmly united after several hours boiling, and of which 5,000 pounds were used for pasting sausages.

Several layers of parchment paper united with this paste closely resemble parchment in appearance and strength, and the material thus produced would be very valuable for many purposes, such as book-binding and the like. Parchment paper may be firmly pasted to linen cloth with the same paste, and the article thus produced is a water-tight paper-linen, very well adapted for packing purposes. The composition of the paste is unfortunately not disclosed.—*Manufacturer and Builder.*

Mechanical Puddling a Success.

The Iron and Steel Institute of Great Britain recently dispatched a special commission to this country to report upon Danks' puddling machine, which has for some time been in successful operation in the iron districts of Pennsylvania. The commission were so well pleased with the working of the machinery that they sent the following cable telegram: "Danks' furnace successful. Construct furnaces for 10 cwt., squeeze or hammer single ball. Economy and quality satisfactory." This announcement will be received with considerable interest by the iron masters in this country.

The inventor of this device, in a paper recently read before the Iron and Steel Institute, claimed for it the following advantages: A great saving in the cost of labor, and also in the consumption of coal, varying according to the size of the furnace; a superior and more regular quality of puddled iron from a given quality of pig; a yield of puddled iron much in excess of the charge of pig metal, instead of the usual loss, the extra yield being obtained by the reduction of the rich fettling used in the machine; eight to ten heats, whether of from 5 to 10 cwt., are made in a day of ten hours when suitable metal is used; the refining process is very complete, the whole of the phosphorus and silica, and the sulphur to a large extent, being removed by the chemical action of the lining mixture; the very heavy and exhaustive labor of puddling is performed by steam power, thereby enabling one skilled man to attend to the working of a large quantity of iron; the bringing to nature and balling of the iron is completed by the rotary action without the use of rabbling, except when the heat has to be divided into smaller balls; and the capacity may be suited for heats of any weight from 5 cwt. upwards. The cost of the furnace, weight of product considered, is about the same as that of the usual hand-puddling furnaces. We understand that Mr. Danks will charge as royalty 50 cents per ton.

A DOMESTIC STEAM ENGINE.—It is gratifying to observe that a more than usual amount of inventive talent is being directed to facilitating household and other light work about the shop and farm. We notice in this direction that a small domestic steam motor, has recently been brought out by a distinguished mechanical engineer of Paris. These motors are constructed to vary in capacity from one to four-fifteenths of a horse-power. It is intended to drive a sewing machine, churn, lathe, small saw, pump, ventilator, and in fact any and all machines now driven by hand or foot power. The engine is heated by a gas jet, the boiler being vertical and of peculiar and most perfect construction for utilizing the largest amount of heat. It can be set anywhere in a room, where it can be connected with a gas-burner. The boiler is large, so as not to require being fed oftener than once in four hours, even when in constant use, and still holds only four gallons.

By a peculiar arrangement the speed of the machine is made to enlarge or contract the volume of the flame, and thereby regulate the production of steam to the amount of work done. When the machine is at rest, the flame is so reduced as to merely keep the steam at a low pressure. The same device also acts as a safety valve. Explosion would be next to impossible. The engine and boiler weigh only 200 pounds, is 33 inches high, and costs in Paris but \$100.

AN IMPROVED LAMP.—We notice the following recent lamp patent which must be a great assistance in the awkward duty of lamp filling: The improvement embraces a guide arranged in the body of the lamp adjacent to the filling-hole, and adapted to guide a float within the lamp. Also, a bright cap on the float, so mounted in the lamp as to be conspicuously seen in looking down into the filling-hole, and to warn when the filling is nearly completed. Also, a perforated cylinder in the hollow stock or shaft of the lamp, so arranged as to receive air freely below, and to discharge it gently into the space around, to be thence conducted upward through an annular space to the burner.

CUTTING THREADS BY PRESSURE.—Of late threads have been raised by forging instead of cutting. The rod hot end of the bolts is placed between dies, with a female screw thread cut into them. The upper die being pressed down on the iron, the threads are instantly formed, and are much tougher than the old one.

SCIENTIFIC PROGRESS.

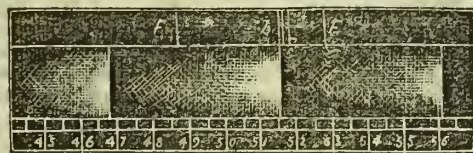
Encke's Comet.

This comet, a very insignificant object in itself, has elicited much interest among astronomers from the short duration of its orbit, its near approach to the sun—nearer than Mercury—and the apparent uniform retardation of its period. We made somewhat lengthy mention, last week, of its connection with the theory of a resisting medium in space, and but lately alluded to the telegraphic report that Dr. Huggins, the English astronomer, had succeeded in obtaining the spectrum of the comet. A few days since we received an advance sheet from the forthcoming January number of the *Boston Journal of Chemistry*, from which we learn that Professor Young, of Dartmouth College, had also obtained a spectrum which he has figured in the proof-sheet before us, and which we have here reproduced.

The comet itself as seen through a telescope, is a rounded mass of nebulous matter, about 5' in diameter, with no definite outline, and without any distinct nucleus. It is considerably brighter in the center; but so extremely attenuated that a star even of the ninth magnitude may be seen through it, almost as distinctly as when no obstruction is intervened.

The spectrum, the bands of which, three in number, herewith shown, are apparently identical with those in the spectrum of the vapor of carbon. The middle band, near "b," it will be noticed is much brighter than the other two, and is the most positive of the three. It appears that Prof. Young was more successful than Huggins in fixing the position of the two outside bands.

The spectroscopy, to say nothing of observation, indicates that the material of the comet is gaseous, and gaseous only; for



there is no trace of any continuous spectrum such as must result from the presence of solid or liquid dust, in a state of however fine division. Prof. Young obtained his spectrum observations on the 1st, 2d and 5th of December. The observations of Dr. Huggins were made at intervals from the 8th to the 17th of November. The Doctor says he could not discover with certainty any trace of polarization, and asserts that incontestably there is no polarized light in that of the comet itself.

We were under the impression that this was the first spectrum obtained of a comet; but we are now reminded that Huggins obtained one of Comet II, 1868, which corresponds exactly with the one here shown of Encke's comet.

Dr. Huggins calls attention to the fact that the longer axis of the comet was directed almost exactly towards the sun, and that its head and nucleus were turned away from that luminary. This, he remarked, appears to be the rule with nearly all the smaller class of comets. They carry their tails before them, and not until their smaller fan-shaped appendages have been well warmed by the sun's rays, do they begin to shoot out large tails in the other direction.

It is an interesting fact that the cometary matter appears to be thus directed towards the sun, and that it has not as yet fulfilled, in appearance at least, any of the conditions requisite for the maintenance of the theory that comets draw their sustaining matter from the sun.

The aspect of the comet, according to a drawing made by Mr. Carpenter of Greenwich, was that of "a somewhat shuttlecock-shaped nebulous haze, with two wings of much fainter light, extending on either side, giving a flattened appearance to the head of the comet." A drawing made by Dr. Huggins agreed quite closely with the above. He thought that he had detected a minute but distinctly marked nucleus in the head of the "shuttlecock."

ELECTRICITY AS A DENTAL AGENT.—The use of electricity as an agent in aid of dental surgery is a novel scientific application. Dr. Bonwill exhibited, at a late meeting of the Franklin Institute, an electro-magnet, which was constructed to drive a plugging tool for filling teeth. By its agency the work of dentistry is said to be greatly lessened, and the time of an operation considerably shortened.

DEPOSITING ALUMINUM ON METALS.—J. Baynes Thompson, of White Hall, Eng., writes to the editor of the *Chemical News* that for more than two years he has been depositing aluminum daily on iron, steel, and other metals, and driving it into their surfaces at a heat of about 500° Fahr., in the same way as he does silver and nickel. He also says that he can do the same thing with aluminum bronze, of various tints from the palest lemon to the richest gold color. Some years ago, Dore of Birmingham, England, also claimed to be able to coat copper, brass, and German silver with aluminum by means of electrolysis. As there is no reason to doubt the veracity of these gentlemen, it would appear to be a fact that aluminum can be deposited by electro-galvanic action the same as nickel, copper, and other metals. We should be glad to be furnished with the details of the process.

GOLD IN THE Eozoic OF WISCONSIN.—Prof. Roland D. Irving, of the University of Wisconsin, reports the discovery of gold in the Eozoic of Wisconsin. He has found small quantities in the quartz veins of Clark county, a few miles to the northward of the junction of the Potsdam Sandstone with the great stretch of Eozoic rocks, which underlie the northern half of the State. The prevailing rocks in this section, are chloritic and talcose schists, intersected by numerous veins of quartz. Associated with the gold were small quantities of magnetic iron in scales, pyrite and mispickel, as usual, scattered through a barren looking, tough white quartz, presenting none of the reddish or rotten appearance common to surface gold ores of any value. He obtained, by assay, a yield of 20 cents per 2,000 lbs.

NEW PRODUCTS FROM THE OXIDATION OF CARBON.—A most important investigation from Prof. Schultze has just been announced, upon the products obtained in the direct oxidation of carbon with permanganic acid in alkaline solution. Besides oxalic and other acids, which were thus obtained in considerable quantity, the savant just named has succeeded in obtaining one which he called provisionally "anthraconic" acid, but which he at the time suspected, and subsequently, with the aid of Dr. Carstanjeu and Baeyer, proved to be identical with mellithic acid. The importance of this splendid discovery to theoretical science will be duly appreciated by the laborers in the field of organic chemistry, and at the meeting of the scientific association at which it was announced, it was received with enthusiasm; while as the pioneer research in a field now opened for future fruitful discovery, its value to applied chemistry can hardly be over-estimated.

The mellithic acid was obtained from various forms of carbon (amongst which was the graphite), and yielded, on distillation with soda-lime, benzol, and this, upon nitration and subsequent reduction gave aniline.

PENDULUM EXPERIMENTS.—A series of careful experiments for determining the gravity of the Earth are about to be made at the Mont Cenis Tunnel. They will be made first in a lateral chamber about the centre of the tunnel, and will be afterwards repeated at the corresponding vertical point on the mountain, the difference of level being about 1,600 metres. In addition to these observations they propose to determine the earth's magnetism and the temperature of the strata to which they can obtain access. By preliminary observations they have ascertained that the movement of the trains will not to any serious extent interfere with the precision of the observations. The different points of observation will be connected with telegraph wires for the purpose of chronographic registration.

ELECTRICAL INDUCTION.—P. Blaserna, having experimented upon the velocity of electrical induction, estimated the rate of propagation in air at 550 metres, and in gum lac at not more than 330 metres per second. The latter velocity is about equivalent to that of sound in air. Dr. Helmholtz, suspecting that the results were affected by induction within the apparatus employed, has recently reported some experiments which demonstrate a velocity of more than 195 miles per second, or more than 600 times as great as Blaserna's estimate.

HORTICULTURAL.

WEEDS AND SEEDS.

[Written for the Press, by E. J. HOOPER.]

Canada Thistles, Marigold, Migration of Seeds, Change in Locality.

Owing to the great droughts in the dry season in California, weeds are not found so rampant and injurious as they are in many other parts of the world; and the cultivation, or use of the plough and harrow in dry times being more needful to absorb all dews and moisture. These operations also tend much to their destruction and extirpation. But we have even in California more weeds than we desire, and we are likely to have a larger addition to these (as well as seeds) in the importation of many articles of new plants, grasses, grains, etc. As weeds are great leeches, and almost the worst enemies that farmers and gardeners have to contend with, as well as the most unsightly objects upon the farm or garden, the numerous readers of the Press may be interested in knowing some of the ways by which Nature has scattered them over the earth.

Canada Thistles, Marigold.

So universally are weeds regarded as injurious to agriculture, that in some countries laws have been enacted to insure their destruction. In the more northern parts of the United States it has been made a fineable offence to permit the Canada thistle to perfect its seeds. France imposes a heavy penalty on all who are in like manner neglectful of the common thistle. Every man in Denmark who fails to destroy the common marigold is severely punished. In the early history of Scotland whoever poisoned the King's lands with weeds, introducing thereby a host of enemies, "was denounced as a traitor." Unhappily with us there as elsewhere is an abundant yield of these weed-pests.

As such instances as the above show how such nuisances and foes of the farmer have been regarded by the agricultural world both in Europe and America, one would think that it is now high time for us in California to hear of their diminishing in number. But no such diminution can as yet be asserted—on the contrary, they are, evidently greatly on the increase.

Migration of Seeds.

The history of the migration of seeds is full of the most curious statistics. The review of a recent publication makes the following interesting statement:

The lonely island of St. Helena, for example, at the time of its discovery in 1501, produced about 60 vegetable species. Its flora now comprises 750 species. The faculty of spontaneous reproduction supposes a greater power or accommodation than we find in most domesticated plants: although every wild species affects a habitat of a particular character, it will grow under conditions exceedingly unlike those of its birth place. The 750 new species which have found their way to St. Helena within three centuries and three quarters, were probably not in very large proportion introduced there by human art. As a general rule it may be assumed that man has intentionally transferred fewer plants than he has accidentally into countries foreign to them. The weeds that grow among the cereal grains, and form the pest of the kitchen garden are the same nearly in America as in Europe.

Some years ago I was informed by an eminent botanist and traveler that the collection of seeds which he made in the wheat fields of upper Egypt, and in the gardens of the Bosphorus were almost all of them identical with those that grow under the same condition in New England.

Change in Locality.

The change from one locality to another is effected by a thousand casual circumstances. The upsetting of a wagon of an emigrant on his journey across the western plains may scatter upon the ground the seeds he designed for his garden. The herbs which fill so important a place in the rustic *materia medica* of

the Eastern States springs up along the prairie, paths opened once by the caravan of the settler. The *hortus siccus* of a botanist may accidentally sow seeds from the foot of the Himalayas on the plains that skirt the Alps. It is frequently observed that exotics transplanted to foreign climates suited to their own growth escape from the flower gardens and naturalize themselves among the spontaneous vegetation of the pastures.

It is said that the straw and grass employed in packing the sculptures of Thorwaldsen were scattered in the courtyard of the museum in Copenhagen where they are deposited, and the next season there sprang from the seeds no less than twenty-five species of plants belonging to the Roman Campagna. In the campaigns of 1814, the Russian troops brought in the stuffing of their saddles, seeds from the banks of the Dnieper to the valley of the Rhine, and even introduced the plants of the Steppes into the environs of Paris. The Turkish armies in their incursions into Europe brought eastern vegetables in their train, and left the seeds of Oriental wall plants to grow upon the ramparts of Budda and Vienna. The Canada thistle is said to have sprung up in Europe 200 years ago from a seed which dropped out of the stuffed skin of a bird. There may be good, but there may be much evil also, in numberless ways of distribution of many kinds of seeds. That was not an unfortunate event to California that was the cause of spreading the wild oats—supposed to have been done by the Spaniards.

APPLES WITHOUT BLOSSOMS.—Some time last spring there was considerable talk about apple trees that never bloom, and which have been very productive. During the summer Mr. Ely, of Norwich, Conn., sent some of these apples to the Farmers' Club of New York. The apples came originally from the farm of Mr. Ely's father, in Litchfield county, of the same State. The original tree has borne for over 50 years and still has never shown a perceptible blossom. The shape of the blossom end is very peculiar, and Mr. Fuller was requested to dissect one, and make such remarks as he might see fit and which might be of interest to all who participated in the former discussion or read about it in the papers.

Mr. Fuller remarked that Mr. Ely had not examined closely, or he would have found that his trees do bloom. We have in these specimens the proof that these are blossoms—not perfect, however, because there were no petals, and this is why the man thinks there are no blossoms. The petals in almost any flower is merely an ornamental organ and not essential to the production of fruit or pulp. These apple blossoms had a calyx, for it is now upon them; they had also pistils, for they contain seed and probably stamens, as I find the dried up fragments of the same within the calyx. If our correspondent will examine his apple trees very carefully he will find that they do really bloom, although the flowers may be inconspicuous on account of an entire want, or deformed petal.

GRIMES'S GOLDEN PIPPIN, is a new apple that has been introduced for public favor by S. B. Marshall, of Cleveland, Ohio. It is thus described in the *Small Fruit Instructor*: "It is of a Russet, golden color, fair, smooth skin, medium size; round to oblongish; slightly ribbed at the apex; flesh white, with an orange 'splash,' juicy, and has got the 'tone' and 'character' that go to make up one of the finest dessert fruits. In flavor, it reminds one of Peck's Pleasant and also Newton's Pippin, being milder than either, yet sufficiently crisp and sprightly to suit all lovers of those choicest apples." Our nurserymen can obtain scions of the Golden Pippin tree by writing to S. B. Marshall, Cleveland, Ohio who has them for sale.

NECTARINES.—The nectarine is especially valuable to can or preserve whole, or to pickle. All the varieties grown in this country have much more of the prussic acid flavor than the peach, a property highly relished in the canned, preserved or brandied fruit; besides, the skin being smooth, it is best retained, as by this means the fruit is kept whole and is very ornamental after it is cooked.

RIPE ORANGES.—With the approach of cold weather comes the ripening period of oranges. The golden looking ball can be seen on the trees of this vicinity in all of their luxuriant beauty. One shipment of oranges has already been made to San Francisco, and more are on the way to the depot for that destination.—*Los Angeles Star*.

FIELD AND FARM.

Culture of Rice.

EDITORS RURAL PRESS:—I am no rice bird, but I am told that I have suitable lands for growing rice. I would like to make an experiment, and ascertain whether it can be profitably grown on my land or not; and being wholly unacquainted with the peculiarities of soil, climate and culture the best adapted to its growth, I would be glad to obtain such information on the subject as will enable me to make a beginning on a small scale, with a fair prospect of success.

Can you, without too much trouble, impart the desired information, and oblige a

WEB-FOOT.

San Joaquin, Dec. 18th.

As we recognize our correspondent by quite another name upon our subscription list, we will endeavor to give him just the information he desires on the culture of rice, in the hope that others may be induced to try like experiments with this valuable low-land grain.

Much has been said of the fitness of the tule lands along the Sacramento and San Joaquin rivers for the production of rice, and particularly that district of country around the confluence of these two rivers. But we must be permitted to differ to some extent with many who, without giving sufficient thought to the subject, have endorsed the proposition of its admirable adaptability to the purpose.

All acquainted with rice culture will admit these conditions as requisites. The ground must be so situated that it can be perfectly flooded at will, with fresh water, to a depth of from six inches to a foot or more. Each field by itself, whether large or small, must be perfectly flat or level, to admit of flooding it alike evenly over the whole surface.

The soil must be of a nature that will admit of its being worked into the consistency of soft mud, therefore it must not be so full of half decayed vegetable fibre as to cause it to leach and thereby draw the moisture too rapidly from the surface, when the water is drawn off from the growing rice, at certain stages of its growth.

No rice field should be exposed to the force of strong winds during any period of its culture, but particularly when the plant is in bloom, and again just previous to and during the final ripening of the grain.

Now do the lands at the confluence of the rivers we have named, possess these requisites? Have they not an extremely porous subsoil, and for the greater part of summer do they not feel the effects of more than ordinarily powerful and almost constant winds?

We have no doubt but that certain districts on both these rivers further away from their confluence, and not so much exposed to the strong winds that set with such force through the straits of Carquinez, may yet be found admirably adapted to rice growing, but experiment such as our correspondent proposes, can alone settle the question.

A rice field should be surrounded with a sufficient levee to retain the necessary depth of water when turned on, with flood-gates and ditches sufficient to admit the water and pass it over the surface and drawing it therefrom at numerous points, which will prevent the washing away of the surface soil of the field, which would be liable to happen if the water was all distributed over the field from one point, and all drawn off from the same place.

Having put the field in condition for rapidly flooding it, and equally rapid drainage, prepare the soil by extirpating every weed and all grass roots. This clearing of the land of all manner of vegetable growth, is almost as requisite to success as the presence of water.

Next convert the whole surface by harrow or cultivator and water to the depth of three or four inches, to a soft pastry

mud. Upon this mud sow the rice broadcast, as you would wheat, and about sixty pounds to the acre; it needs no harrowing or covering; then let on the water, and just deep enough to cover the ground.

The heat of the sun will in a few days warm it enough to cause the rice to sprout. When it is swelled ready to sprout, draw off the water.

The young shoots will soon appear above ground, and when they have reached a height of six or seven inches, let the water on again, being careful never to let the water entirely cover the tops of the plants, for this would kill them; but increase the water as the growth advances, keeping the water, say one-third the height of the stems, and when the rice begins to bloom, it is well to have the water if possible, half the height of the stems; let it continue thus until the heads begin to turn yellow; then draw off the water and let the land dry sufficient to admit of harvesting the crop.

It requires a little over three months to mature a crop of rice, so that by sowing the first crop in February, it would be an easy matter to grow two crops on the same land in a single season.

In locating rice lands it should always be borne in mind that strong winds during the season of blooming are extremely injurious to the crop.

Before the season of harvesting arrives, we will give all needful directions in relation thereto, if reminded of it by our San Joaquin correspondent.

"FARMERS, WRITE FOR YOUR PAPER."

We are under many obligations to our friends for the promptness with which they have already replied to the above request, and we shall feel very thankful for a continuance and increase of such favors. We wish to add. There is no way in which we can make the RURAL PRESS more profitable to its readers and subscribers, than in publishing the individual experiences of the few for the benefit of the many. Every farmer knows that he can learn much by traveling among his brother farmers and informing himself with regard to their various modes of farming, their experiments, their successes, and even their failures. Now we propose, with the help of our friends, to bring this information right to the home of each reader of the RURAL, and thus save them the expense and loss of time in traveling around for such information.

Tell us then, friends, how *you* make your farms pay, so that we can tell the same to the many thousands who read the RURAL. Write us short, practical articles, such as every one can understand. We don't want theory; we want just what you know to be facts by practice. We wish to give our readers information that will make the farm pay, and make this journal invaluable to every farmer on the Pacific Coast—make it such that every one can, with its help, make his farm pay.

FARMING IMPLEMENTS NEEDED IN MONTANA.—A writer from Montana informs us, that the agricultural implements in that Territory as a general thing are a very inferior article, which eastern manufacturers have forwarded there. Plows and other farming utensils of new and improved styles are badly needed. We would be pleased to have the many readers of the RURAL in Montana inform us what kind of implements are required, and will give any information they desire, as to the most improved kinds of agricultural implements in use on the Pacific coast.

GRAND ISLAND.—The levee, although unfinished, has not been damaged \$100 by the flood; in places where the different sections of levee had not connected, the water flowed in until it had obtained a depth of three feet in the lowest part of the Island. This will soon drain off.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY—From the *Brooklyn Home Journal*: AGRICULTURAL ADVANCES.—Our county takes the lead as a grain grower, while Santa Clara's specialty is fruits. Here many of the agricultural experiments that have made California noted, were first made. Here the first ramie was planted, here the first apple trees were procured for Oregon, which has since become famous for that fruit; here the first beet sugar in the United States was made; here plants have been raised which have sent seed to the four quarters of the globe. But our great boast is our grain product. Of course the grain interest has largely suffered during the dry seasons just passed, but it will revive again with increased activity and profit. As an evidence we may mention the fact that before the last heavy rain, one wheat-grower in the Livermore Valley had finished sowing 1,800 acres of wheat, and is now plowing 1,800 acres for a like purpose. We may safely say that for richness of soil, variety of products, beauty of scenery and agreeableness of climate, the plains of the Alameda and the valley of Santa Clara, stand unrivalled in the world. And what is more, there exists no drawbacks whatever that would make them undesirable habitations.

COUNTY STATISTICS.—The County Assessor has made up his annual report to the Surveyor-General of the industrial and agricultural condition of the county during 1871. There have been 121,240 acres of land cultivated, being 3,477 acres more than last year. There is a heavy decrease in the average and quantity of wheat, rye and corn; but there is a corresponding increase in the average and number of bushels of barley and oats. The cultivation of buckwheat is about the same. The increase in beans and peas is considerably over that of last year. The report for 1870 shows that 1,013 acres of potatoes were cultivated, producing 82,640 bushels. This year we have 1,300 acres in cultivation, with a product set down at 81,800 bushels. Last year there were 293 acres of onions cultivated, which produced 25,108 bushels; 7,465 acres of hay, producing 12,475 tons; 375 acres of flax, producing 68,600 pounds; 5 acres of hops, producing 1,870 pounds; 1,295 tons of beets, 32 tons of turnips, 1,280 tons of pumpkins and squashes, 75,350 pounds of butter, 4,218 pounds of cheese, 215,775 pounds of wool, 4,325 pounds of honey. In fruit trees and vines, the increase this year over the last is considerable, except in peach, pear, plum and almond-trees, and raspberry vines. Last year there were but 120 mulberry-trees; this year there are 940. The number of gallons of wine was 4,080 in 1870, and 4,780 in 1871; brandy, 500 gallons in 1870, to 865 gallons this year.

CALAVERAS—San Andreas *Citizen*, Dec. 23d: GOOD PROSPECTS.—The ground is now wet to a greater depth than it has been at any time during the last three years. Everybody is cheerful, and complaints about dry seasons and consequent hard times have ceased to be uttered.

CONTRA COSTA—*Gazette*, Dec. 30th: GROWING.—The warm weather that has prevailed since the storm came on us has quickened the growth of grass, while the grain sown before the rain has already shot its tiny spears 2 or 3 inches out of the ground, and they are opening their blades, giving the hills and fields a verdant aspect.

Antioch Ledger: PUTTING IN CROPS.—Many farmers who have lost heavily during the past year, and who have deferred seeding their ground till assured of rain, will now exert themselves to sow as large an acreage as possible. The soil of this valley is in excellent condition and in a virgin state. We may now reasonably hope for an abundant harvest and greater business activity. Between Bay Point and Point of Timber there are from 60,000 to 75,000 acres of tillable land, which in an ordinarily favorable season will produce \$2,000,000 worth of grain. The beneficial results that will accrue to our town with this immense yield cannot be over-estimated. Before another Christmas we predict a largely-increased population for Antioch, with a railroad from our waterfront extending through the valley, together with a canal which shall forever after supply our valley with water for irrigation.

FRESNO—*Expositor*, Dec. 27th: Our hills are looking beautifully green once again. Grass will soon be long enough to afford good grazing for stock. The rains thus far this season have so encouraged the farmers that many who for a while had

almost given up the idea of attempting to farm are now busily engaged in planting and seeding their ground. Nearly twice as much grain will be planted in this county this year as ever before.

LOS ANGELES—*Plowing*.—The ground is sufficiently moistened to plow upon what are known as the dry lands. The farmers are commencing to plow, and a larger amount of land will be plowed and seeded than for any previous year in the county.

MARIN—*Too Much Rain*.—The ground is so soaked, that farmers will be unable to plow for a month, except on the hill-sides.

MENDOCINO—*Democrat*, Dec. 28th: CORN AND POTATOES.—The coast of this county produces immense crops of oats and potatoes; and this year, we understand from Navarro they were unexpectedly good, particularly for the latter. G. W. Wright, who lives a short distance from Cuffy's Cove raised from 20½ acres 3,600 sacks of potatoes, averaging 129 pounds each, making in all 464,400 pounds.

MONTEREY—*Castroville Argus*, Dec. 23d: ENCOURAGING PROSPECTS.—Farmers are jubilant over the very cheering outlook, and confidence, doubtless, has been restored among stock men. The landscape is rapidly assuming the welcome hues of spring, and to the agriculturist and grazier alike—in fact, to every industrial interest the season promises well.

NAPA—*Cor. Reporter*, Dec. 30th: CONN VALLEY.—The climate is more genial here than in Napa Valley, and free from frost. At the residence of Mr. Frank Sage in the upper part of Conn Valley flowers are still in full bloom and flowering vines are clambering upon the walls of the house. This valley connects Pope and Napa Valley. It is quite hemmed in with lofty mountains and traversed by a small, but rapid and picturesque stream. The general direction of the valley is southwest and northeast.

WINE PRODUCT.—Napa county is rapidly assuming its destined place among the first wine producing localities. The following may be considered reliable as to the quantities of wine made by some of our leading wine-makers: Carver & Pellet of St. Helena, 75,000; Charles King, 65,000; G. Groetzing, of Yountville, 75,000; Sigrist, of Napa City 60,000; Van Bever & Thompson, of Napa City, 23,000. Besides these there are many others who have produced considerable quantities, but we have no figures. Among these we mention McDonnell, of Napa, Burrage, of Yountville, Crane & Montgomery, E. D. Keyes, Giauque & Fulton, of St. Helena, and Kesseberg and J. Schram of Calistoga.

FLOOD.—Among those who have sustained considerable loss by the flood may be named Messrs. G. W. Crowey and Josiah Trubody—the former having lost about 300 head of sheep and the latter 6 head of cattle.

PLACER—*Cor. Auburn Herald*, Dec. 22d: FOOTHILLS.—Plowing and seeding is going on with an energy in the foothills that will prove a success to our part of Placer county. Vineyards have been, and are still being, put out on every sunny hillside where not many years ago chaparral and poison oak were its principal productions; and in connection with the grape vine there is also some mulberry orchards started, for the purpose of raising silk. But how silk raising will succeed is yet to be found out, and experience is the way in which it can be tested thoroughly.

SACRAMENTO—*Record*: AGRICULTURAL PARK.—Somebody has got to foot a bill of repairs at Agricultural Park. The tin roofing of the grand stand was lifted bodily by the wind and thrown over the westerly side of the building. The stand erected for General Sherman at the time he visited the Park, was entirely destroyed.

The new levee of the Sacramento Valley Reclamation Co., at Sycamore Slough, has suffered to a considerable extent and has been washed away at the bridge.

SANTA CLARA—*Gilroy Advocate*, Dec. 30th: TOBACCO RAISING.—A year ago Mr. J. D. Culp purchased a splendid farm in San Felipe valley, from Mr. E. A. Sawyer, and last spring put in a crop of tobacco, five acres of which was planted to Havana seed. From these five acres he has gathered and cured a crop of 8,000 pounds of fine Havana tobacco, samples of which have been submitted to every leading tobacco man in San Francisco, and they all have joined in a certificate that it is equal to that raised on the island of Cuba. The value of Mr. Culp's discovery may readily be appreciated when we state that the tobacco imported from Havana is worth in San Francisco from \$1.12½ to \$2 per pound, while it only costs Mr. Culp three cents per pound to produce the same arti-

cle here. California has every natural advantage for becoming the greatest tobacco producing country in the world. The richness of the soil and mild climate, together with the certainty of dry weather when the crop is being cured, are advantages that cannot be surpassed.

SANTA CRUZ—*Agriculturist*, Dec. 30th: COAST MOUNTAINS.—The coast mountains, though rugged and grand, are not so high but that the very summits can be tilled in comparative safety from the frost. There is less frost in the Santa Cruz mountains than in the Santa Clara valley at their feet. In our opinion, the interior slope is admirably adapted to the culture of all the semi-tropical fruits. Oranges, lemons, limes, olives, English walnuts, pecans, almonds, etc., will certainly succeed in the numerous sheltered and sunny spots to be found throughout these hills. The wonderful yield and superior quality of fine grapes, that Burrell and Feeley have this year exhibited, proves the excellence of the climate. Corn, potatoes, grain, hay, and every sort of farm produce, have grown side by side, this season, on Mr. Burrell's farm, without irrigation, while some of the best farms in this valley have failed from the effects of drouth.

SAN JOAQUIN—*Sacramento Union*, Dec. 29th: LOSS OF STOCK.—Owing to the excessive drouth of the past season, J. B. Arrambido & Co. were compelled to move their cattle from the pasture on King's river, and accordingly brought them this way. Two thousand head were sent over the mountains; 1,900 were put in G. W. Sharp's pasture on Tyler Island, which is formed by the Georgiana slough and the Mokelumne river, and the remainder, about 1,600, were put on Venice Island, where they are still. The heavy rain which fell at the commencement of the first of the series of storms, in two or three days covered the grazing ground on Tyler Island with water to the depth on an average of two feet, leaving only a strip of ground on the outer edge of the island above water. To this many of the cattle and a number of horses (there being over 200 of the latter on the island, including Sharp's and those sent there for pasturing,) made their way. At the first appearance of danger, Sharp and a number of assistants started to get the stock from the island, and yesterday, after working a week, succeeded in getting about 1,000 head of cattle and 80 horses out, and drove them to Georgetown, where they now are in a famishing condition, having been eight days without food. The task of driving them out from the tules on the island was one of great difficulty, the ground having become a swamp in which the poor beasts sunk one or two feet at every step, while the deep holes into which now and again they stumbled frequently became their graves. Over these holes bridges had to be constructed, and this was done by throwing brush and earth upon the carcasses of the animals that had died. Probably 700 head were drowned or perished from exposure, lack of food or being trampled to death by their fellows. There are still, it is thought, about 150 horses and a number of cattle alive on Tyler Island, and an attempt will be made to save them as soon as the cattle that have been saved shall be got to Bruce B. Lee's San Juan grant, where pasturage has been engaged for them. Since Arrambido & Co. left King's river with their stock, they have lost about \$20,000 worth.

San Joaquin Republican, Dec. 27th: Mr. Hanks, who had cattle upon the low grounds of the Pescadero Ranch, west side of the San Joaquin river, lost 300 or 400 head in getting them to the high ground. A band of 2,000 sheep, the property of a gentleman named Carson, were nearly all drowned on Union Island. Others who have cattle, sheep, and horses in the same locality, must have suffered loss, but to what extent we are not informed.

SEED WHEAT.—Seed wheat in large quantities is being forwarded to the west side of the San Joaquin. A vast area of land will be planted on that side of the river this season, notwithstanding the destitution among the farmers. Parties are furnishing seed and receive three-eighths of the crop in return.

VEGETATION.—The hills and valleys have assumed the hue of early spring, and all nature seems imbued with new life and renewed vigor. The early sown grain is giving promise of large returns to the farmers for their labor. All are encouraged to make renewed exertions in the planting and cultivation of large crops, confidence is re-established, and already the country presents a more favorable appearance than has been the case for the past 3 years.

SONOMA—*Russian River Flag*, Dec. 28th: ANGORA GOATS.—We have been shown specimens of wool from Angora goats owned by Mr. Alexander of Alexander Valley, which for fineness of texture and length equal any specimens we have ever examined. Mr. Alexander has a flock of about 150 goats, which range all the way from the common breed to nearly full-blood Angora, and he expects his flock soon to yield him a fine return for his trouble and expense. The wool now is quoted at about 90 cents per pound, and a flock will average 4 or 5 pounds per head. It is just as easy to raise this kind of stock as the common sheep and much more profitable.

The grass is growing finely in the vicinity of Petaluma, being 6 or 8 inches high on some of the ranches adjoining the city.

TULARE—*Visalia Delta*, Dec. 21st: SQUAW VALLEY.—We learn that there has been an abundance of rain in Squaw Valley, and that the farmers are busily engaged in putting in grain with the brightest prospects. The grass is up and growing finely, yet great numbers of cattle, driven into the valley from the plains, are dying on account of not being accustomed to the young and tender feed.

LAND SALE.—A Capitalist about six weeks ago bought some 35,000 acres of swamp land on the edge of Tulare Lake, Tulare county, for 37½ cents per acre. Last week he sold this tract to an English company for \$3 per acre, thus netting over \$90,000 by the operation.

YUBA—*Marysville Standard*, Dec. 28th: ORCHARD DAMAGED.—Briggs' new orchard will not suffer much damage by the present high water—high water on fruit trees when the sap is down does no damage to trees or the coming crop. But this immense orchard will suffer some damage from the wind and the loosening of the soil. This land, before the flood, was alive with gophers. The little fellows, when forced to leave their holes by the water, labored to save their lives by climbing the fruit trees. Being unable to reach the limbs they would cling to the bark of the body of the trees until the waters reached them, and then fall off and drown. The carcasses of thousands may be seen to-day floating beneath the trees of this great orchard.

OREGON.

Walla Walla Union, Dec. 16th: FINE STOCK.—We learn that a gentleman from the Touchet has now between this place and Portland some fine stock that he has purchased in the Atlantic States. He has sheep, hogs and poultry of the very best kinds that could be procured, and we know of no place where their introduction would pay better than here.

WHEAT REMAINING.—Since the boats stopped running, there still remains in store at Wallula 500 tons of wheat.

GRASS.—The grass has grown considerably of late, and the outside pasture is good. Stock is in good condition for this time of the year. The range is better than it was a few weeks ago.

PLOWING.—Within the last few days there has been great activity on the farms. The weather has been fine and the ground in good condition, and farmers are busy plowing. There is a great deal of new land being plowed this fall, and there will be larger crops sown than usual.

Oregonian, Dec. 16th: A lot of apples, 400 boxes, has been shipped from Coos Bay to San Francisco. Something new from that quarter.

At the Horticultural Fair held in this city, last summer, Mr. Cullen exhibited some very fine Early Rose potatoes—the crop of the season—which took the premium. Afterward, he planted his prize potatoes and their product were the potatoes shown us last evening. They are the second crop from the seed grown in 1871, being about as large as a goose egg, and were matured. Mr. Cullen, also, raised some very fine short top blood beets, one of which he showed us, measuring 25 inches in circumference; and some extraordinary celery, one head gathered Thanksgiving Day, weighing 8 pounds and two ounces. These products were grown in the garden of Senator Corbett, in this city, where the soil is not generally understood to be first class; and show what can be done even in poor soil by good gardening.

NEVADA.

CATTLE DYING.—Accounts from Humboldt Wells, Dec. 31st, state that American and California cattle are dying in that neighborhood in large numbers on account of the severity of the winter. As yet it has not injured Texas cattle to any extent.

The flood has caused considerable damage to the property of farmers in Carson Valley.

The State Geological Survey.—No. 1.

An Important Question.

Prominent among the questions which the present Legislature will be called upon to decide, is that of the further continuance or the discontinuance of our State Geological Survey.

This work was commenced in 1861, and continued without intermission until the close of 1867. It was then discontinued for two years, owing to the fact that the Legislature of 1867-8 made no appropriation for it. But it was again taken up by the Legislature of 1869-70, and has been carried on during the last two years under the appropriation of \$2,000 per month, then made for its continuance.

It thus appears that the work of the Geological Survey has extended through a period of about nine years; and the questions very naturally arise, what is the character of this work; what have been its results in the past; what are they likely to be in the future; and what is their practical value to the State at large?

If, as some believe, the Geological Survey is doing nothing and producing nothing but elaborate pictures of extinct shell fish and minutely scientific descriptions of bogs, then we may well be excused for believing that "the play is not worth what it costs." But if, on the other hand, it shall appear that it is in reality an earnest investigation by able brains and skillful hands of the material resources of the State, and especially of her mineral wealth, as well as of the history of the formation of her mountain ranges, the cutting out of her tremendous canons, the growth and extinction of her immense volcanoes on a scale of grandeur far exceeding anything the continent now shows, the extent of her mines of coal and quicksilver, the distribution of the gold in her rocks and veins, the character, extent and origin of her vast masses of auriferous gravel, the formation of her broad and fertile valleys, the capacities of her soil, the laws which govern her kaleidoscopic climates, in a word, if the whole physical structure of her frame,—if the money hitherto devoted to this work by the State has been wisely and economically expended in the gathering of reliable information upon subjects such as these, and if the Chief of the Survey is busily employed in sifting and classifying the mass of information so obtained, deducing order from what has hitherto been chaos, gradually solving the difficult problems of our peculiarly complex geology, and presenting as rapidly as possible in systematic and intelligible shape, the results of all this work in his reports and maps, for the benefit of the people at large, and for their guidance in important practical questions of agricultural and mining industry,—then the matter assumes an altogether different shape, and the question is rather, can a State like California afford to stop a work like this before it be completed?

We have recently been investigating with considerable care the work of the Geological Survey and the present status of its affairs, and propose to give to our readers the results of our investigation.

The General Character of the Work.

Before entering into details, however, we will give a short sketch of the general character of the work, its purpose and its aims. And in doing this, we shall make the freest use of an article which appears in the January number of the *Overland Monthly* from the pen of a writer who is evidently well acquainted with the subject, and knows of what he speaks.

The object of the Geological Survey may be best made intelligible by stating that it is taking an inventory of the "natural resources" of the State, and by the term "natural resources" is meant the innumerable good things which she has inherited from mother Nature,—her soil, valleys, mountains, plains, rivers, lakes, the treasures of mineral and metallic wealth which lie beneath her surface, the creatures which live upon her soil and in her waters, the plants which grow within her borders, these all need to be catalogued just as a merchant needs to have his stock of goods inventoried, or a farmer the boundaries and the quality of his fields determined.

That the Legislature which in 1860 set this survey on foot took this comprehensive view of the subject is clear enough; for the Act authorizing the work calls for "an accurate and complete geological survey of the State, with proper maps thereof, and a full and scientific description of its rocks, fossils, soils and minerals, and of its botanical and zoological productions." This was the language of the original Act, and it has not only never been repealed,

but it has been confirmed again and again by successive Legislatures. Such therefore is the work which it has been the duty of the State Geological Survey to accomplish, so far as the means which have been placed at its command would permit.

Topography.

It seems hardly necessary to point out the desirability of a geographical basis for the geological work, or the impossibility of any accurate delineation or intelligible description of the geological features of a country without a correspondingly accurate knowledge of the situation, extent and outlines of its mountain ranges; their altitudes above the sea, the courses of its streams, the location and extent of its valleys; in a word, of just such features as those which are shown upon good topographical maps. Geological determinations, in fact, unless made available and permanent by being recorded upon suitable maps, are of little value, and of hardly any account for practical use. To be available, the information must be accurately located. As well might one attempt to paint a picture on the air, or put a roof on a house before the walls were built, as to convey geological information without a map on which it can be embodied.

Physical Geography.

Closely allied to the topography proper, is the physical geography of the State, or the study of the geographical facts from a generalized point of view; for instance, as related to the climate, and thus as bearing directly on the agricultural and sanitary condition of the people. Consider for a moment how important even one class of simple facts in this department may become. We refer to the determination of heights above the sea-level, by which the relative differences of elevation are determined and the form of the surface made out. This kind of information is of the greatest practical value in its bearings on all questions of drainage, irrigation, road building and the like. There is hardly any great branch of industry in the State which may not be in some degree benefited by this part of the work.

Geology.

It is popularly supposed that the geological part of the Survey means merely "prospecting" the ground for the purpose of making new discoveries of valuable deposits of ores or minerals. This is by no means the case. There are prospectors enough already in the field. It would be difficult to find a gulch in California into which some indomitable individual had not already penetrated; neither would it be easy to find any kind of worthless rock, which had not been supposed by some one to be of value. The object of the Geological Survey is something very different from mere prospecting. It is, rather, to examine everything which has been already discovered, and from the accumulation of such observations to combine the experience and knowledge of all, so that general results may be obtained which shall be of great value as tending to put a stop to wasteful expenditure and misdirected explorations; while incidentally of course a large amount of information is gained which is of essential service in properly guiding the active exploration and development of our mines. The Geological Survey makes no pretensions to the kind of knowledge that is claimed by the charlatans of the "divining rod" and the "goldometer."

It is folly to suppose that the geologist should always be able to tell beforehand precisely where a shaft must be sunk or a tunnel driven to strike rich pay. No man can see through fathoms of solid rock. No good geologist or mining engineer ever pretends to do it. But he ought to be able after a careful examination of the ground to understand and weigh the probabilities of the case with a sounder and better founded judgment than a man of less experience and information can do. And with reference to the mines it is precisely those facts of observation and practical experience combined with a proper knowledge of the character and distribution of rocks and ores upon which the judgment of a reliable mining engineer is always based, that it is the province of the Geological Survey to gather, and systematize, and publish to the people for their better guidance in the ever-hazardous work of mining enterprise.

Having thus briefly touched upon a few of the most salient points in the broad field which a geological survey of a State like California should cover, we propose in our next issue to give some definite account of what the survey has actually been doing, and then to enquire in how far it has met or has failed to meet the requirements of the original Act which ordered it, and the legitimate expectations of the people.

Hybrid Animals.

It is interesting to note how facts crowd in on us of a nature so curious that a few years ago they would not have received the slightest credence, but which are now placed beyond all dispute. It is not so very long since that hybrids were considered absolutely sterile. The mule was taken as a type of all this class. Now it is pretty certain that, if not the only exception in sterility, it is nearly so, and even mules have been known to produce offspring. In other animals mules are getting a varied existence. Recently, at the Academy of Natural Sciences of Philadelphia, a bird was exhibited which was a hybrid between a Brahman and a Guinea fowl. It was a very unique and pretty bird, pure white, with more of the graceful in its outline than either of its parents. The *American Naturalist*, always careful of its facts, not long ago gave some authentic details of hybrids between the common house cat and the raccoon of the Southern States. All these undoubted cases prepare us for admitting the following from the *Poultry Bulletin*, as being within the bounds of probability. In this Mr. E. H. Rogers, of Tuscaloosa, Ala., sends a description of an interesting hybrid produced by mating a turkey cock to a common hen.

He writes: "I have twenty-one fowls, the result of this union. At hatching, they resembled the chickens in their form and their chirping, though somewhat larger. After feathering, they assumed the color of the turkey, and the tails, instead of being like that of the maternal parent, were square, resembling that of the turkey. The bill resembles that of a chicken and a turkey. Some of them have combs very prominent at hatching, resembling much those of the common cock, though turned a little to one side. The others have no combs at all on that part of the head where the comb grows. There is a smooth place at the upper end of which is a little projection resembling that of the turkey gobbler. They are now about three months old; they have changed but little, and are as tall as common hens. I expect to show them in different States this year at the Fairs, and I am in hopes you will see them. I send you a feather from the wing of a three months' old fowl, that you may see its character for yourself."

The greatest interest to poultry-raisers is to know whether these hybrids can be perpetuated. We have already said that progeny from hybrids is getting to be the rule rather than the exception. It was at one time supposed that the buffalo and domestic cow produced together a sterile progeny, but this is now known not to be true.

Almost all persons who believe in the sterility of hybrids try no further after producing them; and we offer these suggestions to encourage those who have been fortunate in producing them to continue on in their experiments. — *Philadelphia Press*.

The World's Fair of 1873.

Americans should remember that Vienna is to have a world's fair in 1873. At the Paris exhibition of 1867 nearly everything sent from this country took a prize, and there is no reason why the same thing should not be repeated at Vienna in 1873. The exhibition will undoubtedly be the largest that has ever yet been seen. The park set apart for the exhibition contains four times as many square yards as has ever been similarly occupied, and the principal building alone will have a length of 4,650 feet. The committee having the matter in charge wish to have full display of the raw materials and manufactured articles of each nation, with statistical information in reference to the amount produced and the trade therein.

Special efforts will be made to have the art collections as complete as possible, and it is proposed to have a loan collection from all the German museums, similar to the celebrated one at Kensington. Another speciality will be a collection of articles used by different nations in their domestic affairs, kitchen utensils, furniture, dress, ornamental objects, in fact everything used about a house. As the Austrian nation has never had an exhibition of this character, they will undoubtedly work hard to make it a success. The opportunity ought not to be neglected by the manufacturers of this country. — *N. Y. Post*.

CYCLONES.—Mr. Meldrum gives reasons for believing that the East India cyclones are produced by the meeting of the northern and southern trade winds.

The Movements of Insects.

In the sultry noontide, seated under the shadowy grapevine, I often admire the busy black ants marching up and down or pausing to milk their aphide cows that feast sumptuously on the delicate, juicy young tendrils of the vine. Then, as the day declines, I love to rest on the hillside and gaze on the myriad of insects floating in cloud-like masses over the valley, and reflecting the light of the sun now fast sinking in the west. Almost simultaneously with their swarming, the evening birds dart suddenly from secret recesses, and down with wide extended jaws and unsuspended flight their bountiful evening meal. Why can I never see these birds in the act of coming? Verily, the work of the fifth day of creation seems daily repeated, and "fowl fly above the earth in the open firmament of heaven."

The groups of gay insects that sported in the sunshine, their heads turned windward as though enjoying the draught of the warm summer breeze or the aerial food thus wafted to them unsought, disappear with the setting of the sun. Then the sphinxes and the night beetles turn out in force, and the large hawkmoths hover round the phlox of the garden, and silently exercise that "right to life, liberty and the pursuit of happiness," which the cricket, the katydid and their fellow musicians noisily assert.

The men of this generation rejoice in their conquests over time and space, in their iron horses and palatial cars. "The horrid things that crawl" and fly have no voice intelligible to man, or they might advance just claims to the possession and practice of every known variety of locomotion in a degree of perfection that proud man, with all the aid of mechanism, can only rudely imitate. As larva, pupa or imago, the insect moves under the earth, upon the earth, above the earth—under the water, through the water, on the surface of the water—on tree and herb and grass—on insect, bird and beast—in living tissues and in the dead—perhaps in the else all consuming fire. — *Lippincott's Magazine*.

ANCIENT MUSIC.—The Egyptian flute was only a cow's horn with three or four holes in it, and their harp or lyre had only three strings, the Grecian lyre had only seven strings, and was very small, being held in one hand; the Jewish trumpets that made the walls of Jericho fall down were only rams' horns; their flute was the same as the Egyptian; they had no other instrumental music but by percussion, of which the greatest boast made was the psaltery, a small triangular harp or lyre with wire strings, and struck with an iron needle or stick; their sacbut was something like a bagpipe; the timbrel was a tamborine, and the dulcimer was a horizontal harp, with wire strings, and struck with a stick like the psaltery. They had no written music; had scarcely a vowel in their language; and yet (according to Josephus) had two hundred thousand musicians playing at the dedication of the temple of Solomon. Mozart would have died in such a concert in the greatest agonies.

PERSPIRATION ODORS.—The unpleasant odor produced by perspiration is frequently a subject of vexation to persons who are subject to it. Nothing is simpler than to remove this odor much more effectually than by the application of such unguents and perfumes as are now in use. It is only necessary to procure some compound spirits of ammonia, and place about two teaspoonsful in a basin of water. Washing the face, hands and arms with this, leaves the skin as clean, neat and fresh as one could wish.

THE FIRST CHINESE PATENT.—A Chinaman of Canton, China, named Lee Ping, and another of San Francisco, named Pon Jib, doing business together in the latter city, have made application to the Patent Office for a patent on a trade mark for their tea. This is the first application from the "Heathen Chinese" to the Patent Office.

SENSATION IN HORSES.—The fact that horses and other animals with broken limbs do not appear to lose their appetites, have led some scientific men to raise the question whether these creatures suffer as much under the circumstances as men do; for a man could not sit quietly down to dinner just after breaking his leg.

When a diamond is exposed to the intense heat produced by the voltaic battery, it becomes fused and resembles a piece of coke.

THERE are 78 railroads in Germany owning 19,145 miles of road.

USEFUL INFORMATION.

The Gloss on Silk.

The method of giving an artificial gloss to the woven pieces of silk was invented in 1663. The discovery of the method was purely accidental. Octavia Mey, a merchant of Lyons, being one day deep in meditation, mechanically put a small bunch of silk threads into his mouth and began to chew them. On taking them out again in his hand he was struck by the peculiar lustré they had acquired, and was not a little astonished to find that this lustre continued to adhere to the threads even after they had become dry. He at once saw that in this fact there was a secret worth unravelling, and being a man of ingenuity, he applied himself to the study of the question. The result of his experiments was the "glossing method."

The manner of imparting the artificial gloss has, like all other details of the weaving art, undergone certain changes in the course of years. At present, it is done in this wise: Two rollers revolving on their axes are set up a few feet from the ground, and at about ten yards, in a straight line, from each other. Round the first of these rollers is wound the piece of silk, of 20, 40, or 100 yards in length, as the case may be. Ten yards of the silk are then unwound, and fixed by means of a brass rod in a groove on the second roller, care being taken to stretch the silk between the two cylinders as tightly as possible. A workman with a thin blade of metal in his hand, daintily covers the uppermost side of the silk (that which will form the inside of the piece) with a coating of gum. On the floor under the outstretched silk is a small tramway, upon which runs a sort of tender filled with glowing coals. As fast as one man covers the silk with gum, another works the tender up and down, so as to dry the muckage before it has had time to permeate the texture.

This is a very delicate operation; for if, on the one hand, the gum is allowed to run through the silk, or if, on the other, the coals are kept too long under one place, the piece is spoiled. In the first instance, it would be stained beyond all power of cleaning, and in the second, it would be burned. None but trusty workmen are confided with this task; and even with the most proved hands there is sometimes damage. When ten yards of the piece have been gummed and dried, they are rolled around the second cylinder and ten more are unwound. This is repeated to the end. But the silk, with its coating of dry gum, is then stiff to the touch and crackles like cream-laid note-paper when folded. To make it soft and pliant again, it is rolled anew, some six or seven times, under two different cylinders, one of which has been warmed by the introduction of hot coals inside, and this is sufficient to give it that bright new look which we all so much admire in fresh silk.

SPIDERS' SILK.—Speaking of the silk produced by a certain species of spider, Dr. Wilder says: "If you can picture to yourself a mass of pure yellow gold, which not only reflects the light as from a smooth and polished surface, but which has all the depth and softness of liquid amber, you may realize in some degree the wonderful appearance of a sheet of spider's silk as seen in the sunshine; and even in the shade its lustre is greater than that of gold." But to compare the silk to gold is to tell only one-half the story; for the same spider yields silver as well, so that you may draw from its body a thread of silver, or both threads together; their union giving silk of a light yellow color."

A CHINESE WIND-BARROW.—One of the strangest sights in China is their wind wheel barrow; it is drawn by a donkey, and when the wind is fair a sail is set. The wheel turns in the middle of a wooden frame, sustained by iron bars. Upon the frame are hung all kinds of utensils. The donkey is generally mounted by the paterfamilias, the son and heir is at the stern assisting all he can, while the mother and younger ones ride on the vehicle.

THE BRAIN.—It is said that the brain of an idiot contains about one per cent. of phosphoric matter, that of persons of sound intellect, 2½ per cent., while that of the maniac contains 3½ per cent. If this be so, it would seem that in a maniac the brain appropriates an undue proportion of phosphoric matter from the rest of the system, whereby its functions are materially impaired.

Scientific Amusement.

The *Pall Mall Gazette* conveys to its readers two delightful little experiments in vivisection. We reproduce them, as tending to afford both amusement and occupation for leisure moments:

No. 1.—Insert in the back of a rat the end of its own tail, having first pared it raw with a bistoury; it will heal and take root. As soon as the graft is complete, amputate the tail about one third of an inch from the old root. The rat's tail will thenceforward grow the reverse way and out of the back. During the first three months the rat will evince very feeble signs of feeling when the tail is pinched. At the end of six or nine months, the sensitiveness of the part will have much increased, but the animal will not yet be able to guess where it is pinched. After a year, he will, however, be completely up to the trick, and will turn to bite the pinchers.

No. 2.—If you amputate the paw of a young rat, partially skin it, and introduce it through the skin of another rat's side, it will engraft, take nutriment, grow and acquire all the ordinary parts of its structure, as if it had remained with its former proprietor.

The latter experiment is decidedly ingenious, reflecting great credit on the inventor for his originality. Possibly, the rats may object.

ANCIENT AND MODERN WORKERS IN WOOL.—Under this caption the "Bulletin of the National Association of Woolen Manufacturers" for April, copies the letter of our correspondent, Mrs. B., of Minneiska, Minnesota (telling how she worked up with a knitting machine some 250 pounds of wool, and pronounced it not only "a recreation," but profitable withal), with the following handsome preface:

We have often vainly sought for a worthy parallel for the ancient Roman matron whose tomb in the Eternal City bears the epitaph commemorative of her domestic virtues; which were to "stay at home," and "work up wool."

*Domum mansit,
Lanum fecit.*

We find the parallel at last in the Minnesota lady, who penned the following article for the *Western Rural*. But if there is a parallel, there is a contrast. Who, that compares the Roman woman painfully toiling with her distaff all day for a feeble product, with the American matron, by aid of modern invention, running off in mere sport her 1,500 stitches a minute, and turning out at odd moments a product which meets most of her family expenses, — can say that the material science of modern times has done nothing for domestic happiness.

DUST EVERYWHERE.—There is dust on the sea, on land, in the valley and on the mountain-top; there is dust always and everywhere; the atmosphere is full of it; it penetrates the noisome dungeon, and visits the deepest, darkest caves of the earth, no palace door can shut it out, no drawer so secret as to escape its presence; every breath of wind dashes it upon the open eye, and yet that eye is not blinded, because there is a fountain of the blandest fluid in nature incessantly emptying itself under the eyelid, which spreads it over the surface of the ball at every winking, and washes every atom of dust away. But this liquid, so well adapted to the eye itself, has some acidity, which, under certain circumstances, becomes so decided as to be scalding to the skin, and would rot away the eyelids were it not that all along the edges of them there are little oil manufactories, which spread over their surface a coating as impervious to the liquids necessary for keeping the eyeballs washed clean as the best varnish is impervious to water.

GOLD PEN POINTS.—Gold pens are tipped with iridium, making what are commonly known as "diamond points." The iridium for this purpose is found in small grains in platinum, slightly alloyed with the latter metal. In this form it is exceedingly hard, and well adapted to the purpose of the gold pen maker. The gold for pens is alloyed with silver to about sixteen carats fineness, rolled into thin strips, from which the blanks are struck. The under side of the point is notched by a small circular saw, to receive the iridium point which is selected by the aid of a microscope. A flux of borax and a blow-pipe secures it to its place, and the point is then ground on a copper wheel with emery.

GOOD HEALTH.

SALIVATION.

[Written for the Press.]

Salivation is literally an unnatural flow of saliva or spittle. As the saliva is secreted by the parotid, submaxillary and sublingual glands, salivation is the result of unusual irritation of those glands, caused by the presence of some poisonous substance introduced into the system. It is the first symptom of the action of the peculiar poison; but unfortunately not the only one, and is only the introduction to more serious consequences as will be shown hereafter.

Several drugs are capable of producing salivation; yet it is my purpose to speak of but one in this article, which stands pre-eminently in the front rank.

Mercury

Has been used as a medicine since the 15th century, and owing to its uniform and certain effects upon the glandular system, it has been called the "great alterative."

Its action, however, is not confined to the glandular system, for all the tissues, even the bones are affected, and in time destroyed by it.

The condition produced by mercurial poisoning is technically called *hydrargyrosis*.

How it is Introduced.

To produce its effects upon the organism, it is not, by any means, necessary to pass it into the stomach, for the skin and mucous membranes are capable of absorbing it, and often do so, sufficiently to produce its most violent and destructive constitutional effects. By experience this fact is too well known by those whose business requires them to handle it frequently or almost constantly—miners for example. Heat will evaporate it rapidly; but like water it will evaporate at a low temperature, even when undisturbed. Place a quantity of it in an open vessel in a house, and it will vaporize sufficiently to salivate the inmates of the house. Amalgam left exposed to the action of the atmosphere and moderate warmth, will do the same thing, only in a less degree. Agitation favors its evaporation, as is well known by those who work around quartz mills.

Inhaling the fumes which sometimes are carelessly allowed to escape from a retort, and working with the hands in contact with the metal are the quickest and most common ways in which the poison is introduced into the system, by accident.

Its Effects.

The first noticeable effect of mercury is upon the salivary glands (salivation); then follows soreness and ulceration of the gums and inside of the mouth. If this is extreme, the teeth loosen and fall out, or else decay rapidly. It then attacks the throat, producing fearful ulceration, and sometimes mortification and destruction of the soft parts. Accompanying these conditions there is a very offensive odor of the breath. Its destructive effects frequently extend to the stomach and bowels, producing inflammation and ulceration, with, sometimes, fearful hemorrhage (bleeding).

Its effect upon the blood is to decompose it, make it thin and dark-colored, and in a great measure deprive it of the power to coagulate when exposed to the air.

Hemorrhages may occur from the nose, the throat, the lungs, or the stomach or bowels; or the blood may ooze out of the blood vessels into the cellular tissues in spots under the skin.

Its effects upon the bones are, first, *periostitis*, or inflammation of the covering membranes; and secondly, *caries*, literally, rottenness of the bones.

Its effects upon the skin are to produce perspiration, and also to produce eruptions and ulcerations. With the lax and soft condition of the skin and constant perspiration, there is great liability to take cold; while, at the same time, all mercurial affections are greatly aggravated by taking cold.

Mercury also produces *ozena*, ulceration of the nose; *iritis*, inflammation of the iris of the eye; *neuralgia* (nerve pain); rheumatism, gout; falling off of the hair, trembling of the limbs, and even paralysis.

It produces swelling and induration of the liver, testicles, mesenteric, parotid, cervical, axillary and inguinal glands.

The above are only a part of the poisonous effects of mercury; but enough has been enumerated to show clearly its terribly destructive tendency, and its positively destructive effects whenever intro-

duced into the organism by whatever means soever.

Shun the Danger.

The terribly destructive effects of mercury upon the body, as already shown, have had the effect to lessen its use very materially as a medicine, and as a knowledge of the action of medicines increases, it is believed that the time is not distant when it will be looked upon as a criminal act for a physician to salivate his patients, ever so little.

My words of warning, however, are addressed particularly to miners, mill-men, and all others who use mercury largely in their business.

If the adage, "An ounce of

Prevention

Is better than a pound of cure," ever had any force in any case, it does most emphatically in this; for it is a hundred fold easier to keep it out of the system, than to get it out after it has found a lodgment there. To accomplish this the following precautions cannot be too closely observed.

1st. Neither mercury nor amalgam should be kept in the house, and especially in the sleeping apartments, without being bottled and closely corked.

2d. Persons working at quartz-mills, or those employed in retorting or handling mercury in any way, where fumes from the mercury are liable to arise, should avoid them by keeping on the windward side as much as possible.

3d. Clothing, worn through the day, should never be worn at night, nor should it be allowed to remain in the sleeping apartment at night.

4th. The strictest cleanliness should be observed. A thorough bath once a week, at least, is almost indispensable. The clothing worn at work should also be thoroughly cleansed at least once a week. It should also be hung out and exposed to the action of the wind and rays of the sun quite frequently. By so doing the particles of mercury which have found lodgment there, will be liberated and driven off.

5th. The mercury should never be allowed to come in contact with the hands or any other part of the body, for wherever it does, some of it is almost sure to be absorbed.

6th. Fumes of mercury should never be allowed to escape from the retort, but should be condensed with particular care.

Cure.

Unfortunately in *hydrargyrosis* as in almost all other affections, no single remedy can be relied upon as a specific in all cases; but it has to be treated as the condition indicates. I will, however, enumerate some of the most important remedies for that purpose:

For violent bone pains, ulcers of the mucous membrane, and congestive symptoms, nitric acid.

For periostitis, phosphoric acid.

For caries and necrosis, *asafoetida* and phosphorus.

For *ozena*, *aurum muriaticum*.

For mercurial rheumatism and gout, glandular enlargements, cutaneous eruptions, tubercles and ulcers, indurations of the liver, parotid, cervical, axillary and inguinal glands, iodine and iodide of potassium.

For *ptyalism*, chlorate of potassa, and creosote.

Other most excellent remedies, frequently used in the treatment of *hydrargyrosis* are *sarsaparilla*, *conium*, *sulphuretted lime*, *sulphur*, *sulphate of zinc*, *galvanic electricity* and *cinchona*; but it would be impossible to give their special indications in an article of this kind, as the affections arising from the same are so varied, and so often associated and complicated with the *scrofulous*, *syphilitic* and *syctic* dyscrasias.

My advice to all is, first, avoid by all means the absorption of the poison; second, if the poison has already been absorbed get rid of it as soon as possible.

E. J. FRASER, M. D.

No. 102 Stockton street.

EXTREME OLD AGE.—A farmer lately died in East Prussia who is said to have attained his 130th year. Down to the time of his death he was in the enjoyment of the best possible health. He was six feet one inch in height and served as body-guard under Frederick the Great. His son, who lives on his father's property, is 109 years old. He takes long walks every day, can read without spectacles, and is an excellent companion. The nephew of the old man is employed on the East Prussian Railway, and, though he is 72 years of age, he is able punctually to perform his duties.



PUBLISHED BY
DEWEY & CO.
A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

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SAN FRANCISCO:

Saturday, Jan. 6, 1872.

Our Weekly Crop.

We have ornamented the front entrance to the RURAL to-day, with the picture of a scene which will be familiar to most of our friends, after viewing which the reader will turn with increased zest to the somewhat lengthy but interesting "Notes of Travel in Alameda Co.," and the "Letter from Nell Van," one of our earliest and most valued correspondents. The sketch of the "Eureka Lakes," will also be found interesting. The Mechanical and Scientific Progress of the week gives us some interesting hints about "Steel for Locomotive Boilers," the "Success of Mechanical Puddling" and some further interesting facts about "Encke's Comet."

"The Culture of Rice" and "Weeds and Seeds" and our usual Agricultural Summary precede some remarks about the progress and importance of the "State Geological Survey." We are next told some curious and interesting facts about "Hybrid Animals," the "Movements of Insects," etc. The Doctor also comes in with a valuable letter on the subject of "Salivation."

Just here we indulge in some appropriate reflections upon "The New Year and a New Volume," and are advised to "Embrace the Opportunity to Plant Trees" which the abundant rains now present, but to avoid "Wet Plowing." Acting upon our own advice, we have decided to plant an orchard, in which "The Plum" will occupy a conspicuous position. And now, after a brief retrospect of "The Rain Fall," we drop for a moment into the "Home Circle," where we learn how "Housekeeping may be Made Easy," and many other interesting facts.

ORIGINAL AND SOLID.—Contrary to ordinary custom, much of the original matter in the PRESS is set solid, in order to give the readers as much information as possible. Hence some of our neighbors have often failed to give us credit in copying original articles. For instance, we find the Humboldt Register crediting our article "Sage Brush as a Fertilizer" to the Reese River Reveille. Written for us by a very intelligent and observing lady, it was probably taken by the Reveille without credit. We have foreborne noticing such instances heretofore, although we frequently meet with them, preferring to see our articles traveling abroad, without credit, rather than staying at home. We are aware that such things are sometimes the result of inadvertence, as we have learned in our own experience. Probably this might have been such a case. We simply rise to explain—that's all.

ANOTHER BLOCKADE.—Travel upon the Union Pacific Railroad is again suspended by heavy snow storms. In some places the track as soon as cleared is filled up again by heavy drifts. Some of the merchants in this city are ordering their goods to be sent from New York by steamer.

THE HOG CROP of Ohio for 1871 is estimated at 1,008,571 hogs—an increase of forty per cent. over that of 1870.

A New Year and a New Volume.

In offering our readers the compliments of the season we are reminded that a new year also marks the commencement of a new volume; and, at the outset, it affords us the highest pleasure to look back upon the approval and encouragement, which has been extended to us during the past twelve months, in our efforts to establish a journal which should be recognized as a worthy and efficient organ of the agricultural and industrial interests of the Pacific Coast.

Agriculture here, perhaps, more than anywhere else, must be regarded as a science, and one which does not admit of being so readily reduced to general laws as in most other localities. More than ordinary regard must be paid here to circumstances of soil and climate, and so peculiar are the relations of these circumstances to each other and to labor, that many of the best ascertained systems of agriculture, approved in other countries, admit of only very partial application here. Thus the only hope for improving our own system is by careful observations and deductions from our own experience. Methods pursued elsewhere are valuable here only as affording suggestions for modifications of our own. Hence the importance of a live paper, which shall be up to the anomalous circumstances of our locality and to the wants and tastes of the community.

In some remarks last week on the close of the volume we spoke of the newspaper as an educator, and the more we think of it the more we are convinced that the newspaper is the true educator of the people; and to no class more so than to our agricultural communities. Farmers from the nature of their calling must reside in the country, where they are beyond the reach of popular lectures and of well selected libraries, to which town people generally have access. It is thus that to the newspaper they must look for the chief part of their current literature.

Reading for the Million.

It is becoming more and more a matter of serious concern with all right thinking minds, that with the increase of the taste and desire and necessity for newspaper reading, there should be presented to the public such a flood of that weak class of literature, the best description of which is "namby-pumby." The lower class of magazines and the sentimental and sensational publications of the day cover the land, destroying all taste for really useful reading, perverting the minds of the young of both sexes, and introducing them to false views of life and living, without inculcating a single common sense idea. Horrible tales of "bloody murders," sickly, romancing stories of "love and suicide," column upon column of outrageous scandal, and all such sensational and pernicious literature is fast poisoning the minds of the young people of today.

While many parents shrink with horror at seeing such reading placed within the reach of their children, many, quite too many, are indifferent to its presence. Such printed sheets, read in quiet hours, work a subtler and surer mischief upon the impressible mind of the young, than would overt acts of guilt and shame, from the actual sight of which their very natures would revolt.

The Remedy.

The law, moral suasion, public denunciation and parental influences, have in vain been invoked to remove or mitigate this evil. There is but one remedy. The mind, especially of the young, is ever active, and constantly seeking for something upon which to feed. Food it will have, either good or bad; and like the physical appetite, the mind naturally craves unsuitable food, upon which it will surely satiate itself, unless proper nourishment is placed before it, and pains taken to induce a proper selection. The only remedy then is to place in the way of our young people useful reading. Of this nothing better or more acceptable can be found than newspapers devoted to that class of literature. Within the last few years, we are pleased to state, that a number of such journals have been called into existence, which quite fairly meets the wants of which we are speaking.

Within a few years the ordinary commercial and local papers of the day, noticing the growing demand therefor, have devoted a small portion of their columns to the various industrial

departments of mining, machinery, architecture, agriculture, engineering, etc. But the increasing demand for this class of information gradually outgrew the narrow limits thus afforded, and the establishment of class newspapers was commenced to meet the demands of the special trades and industries. Following them, a growing desire gradually grew up for a class of papers of a more general character, which should furnish useful reading "for the million." This desire has thus far brought out such journals as the Rural New Yorker, Hearth and Home, Boston Journal of Chemistry, etc., on the Atlantic coast, and the SCIENTIFIC PRESS and PACIFIC RURAL PRESS, on the Pacific coast.

It is thus that the newspaper proper is gradually enlarging the sphere of usefulness, in responding to the higher calls of the more discerning and intelligent portion of the public, and in creating a more general taste for useful reading to take the place of the large amount of such pernicious literature as we here refer to. Again thanking our kind friends for the valuable assistance they have already rendered us in the good work in which we are engaged, we trust they will not be weary in well doing, but continue their favors for another year; during which we hope to add additional attractions to the PRESS, and still further improve its power for usefulness as a public educator.

EMBRACE THE OPPORTUNITY.

There has been a right good season for planting trees in but few portions of California for the past three years. The seasons have been so dry that many of the trees planted within that period have made but an indifferent growth, and very many of those planted the last year have absolutely died for the want of the necessary supply of moisture in the soil. These facts have very much retarded the progress of general improvement in the country and comparatively but few fruit or ornamental and shade trees have been planted.

Many farmers, especially in the grain growing districts who under favorable circumstances or good seasons, would have had fine young orchards growing, and would have been in the enjoyment of fruits of the earlier bearing varieties in their season, and who would have had their dwellings surrounded with ornamental trees, and the streets or highways leading through their farms, and the division fences lined with shade trees, are to-day without orchard or tree of any kind on their places.

The Year 1872.

To all such, and to every one who has been waiting a good opportunity for planting out an orchard, or for ornamenting their farms and homesteads by planting trees, we would say, embrace without delay the most excellent opportunity which the year 1872 is most sure to present. From the history of the rainfall in California so far back as any reliable information can be obtained, to say nothing of present indications, we have the best reasons to expect the present year will bring us a plenty of rain and a most favorable growing season, not only for putting out orchards and planting shade trees, but for all other agricultural operations. From the same history we learn that such favorable seasons as the present, come only once in about ten years. We would, therefore, urge the importance of a little—yes, a great deal extra exertion on the part of all to plant their orchards, and ornamental and shade trees, as well as to start their artificial forests this season. Embrace the present opportunity.

Trees are Cheap and Plentiful.

In consequence of the dry seasons for three or four years back, and the small number of trees that have been planted out within that period, large numbers of trees have accumulated in the hands of our nurserymen, and they are offering them at lower rates than trees have ever been offered in California before, and probably cheaper than they will again be offered for years to come. With the present prospects of good seasons for a series of years, the farmers can afford to stretch a point in the way of making permanent and valuable improvements this year, especially as the improvements we are urging will very much add to the value of their places.

Plant Early.

Trees planted early in the season do much better than those planted late. We would, therefore, urge all who contemplate planting at all to get them into the ground as soon as possible. The sap is now dormant, but will

soon begin to move. Again, a tree that is planted soon will have the benefit of all the rains that are yet to fall, and will be in almost as good condition for making a good growth the present season as though it had not been transplanted at all. The roots that may have been cut in digging or that may have been lopped off with the pruning knife, if placed permanently in the ground not to be again disturbed, will, before spring, be completely healed, and will soon have thrown out small rootlets before the buds will have commenced to swell.

Plant Well.

There are but few operations on the farm or in the orchard or garden in which a little extra labor judiciously performed, will be so well rewarded as in planting trees. Let no part of the work be slighted. Dig the holes large and deep, and in refilling them use the surface earth, being careful to spread the roots well and fill in around them with fine, well pulverized soil. Place the tree about the same depth in the ground as it stood before digging, if placed a little deeper no harm will be done. If any of the roots have been broken or bruised in digging or handling, be sure to cut such bruises off with a sharp knife, before planting. Also cut the branches back well and with a view to a symmetrical growth. But our object was not so much to give rules for planting trees as to urge the importance of planting them in a favorable season. We would, therefore, say again, embrace the present favorable opportunity.

Wet Plowing.

The rains have held off so late this season and have now come so plentifully and the prospects look so bright for making a good crop that we fear the farmers will be tempted to put the plows running while the ground is yet too wet. If any be so tempted, we would remind them that nothing will thus be gained. On the contrary much may thus be lost.

In the first place it produces a permanent injury to the land itself to stir it when too wet. It causes it to dry in hard lumps and clods—the particles so compactly setting together as to be impenetrable by the air and even to water itself, for a considerable length of time.

Plowing land when too wet is only another name for "puddling" the soil; and everybody knows that puddling the soil—particularly the clay or adobe soils of this country—is the process by which the adobe bricks are made. That when so puddled and packed together it will withstand the action of the weather for years, without dissolving or falling to pieces. So when clods or lumps are formed on the ground by working the soil too wet, it will require years of the most careful cultivation to reduce the soil to a good fine and lively condition again.

The Loss of Crop.

From what we have said as to the condition of the soil, in consequence of plowing when too wet; it may readily be inferred that such plowing would pretty certainly cause a partial failure at least of the immediately succeeding crop. Such most surely will be the result. The life and fertility of the soil will thus be destroyed and a poor crop or none at all will follow as a natural consequence. Better be patient and wait till the ground is in good condition even if you can't get in but half the grain you desire to sow, than to run such risks of producing such permanent injury to your land and of losing your seed and labor by being in too great haste.

SHERMAN ISLAND.—Mr. D. L. Perkins of Emmaton, furnishes us the following particulars concerning Sherman Island: The levee has protected the island thoroughly, although the tide on the 23d ult. was the highest seen for years. But little drift has passed down the river. Three miles above Mr. P.'s house the whole country is under water. Sherman Island is very productive, and a beet sugar manufactory is talked of. Sugar beets grow to perfection and there are good facilities in the way of land, coal, water and river navigation, for the establishment of such an enterprise.

THE RECLAIMED LAND LEVEES, so far as heard from, have thus far stood the press of waters without any material damage, save by acts of malice. Capt. Walker, superintendent of the Tide Land Reclamation Co., reports that the Grand Island levee has not sustained a dollar's worth of damage from the floods. There is none except surface water on either Sherman or Twitchel Islands.

Our First-Page Illustration.

Who among us does not remember when he gives himself up to thought and the "waves of memory backward roll," some of the scenes of his childhood's home, when we sported gleefully around the old farm in all the joyous health of childish innocence, played hide and seek in the hay mows and romped barefooted over the fields without a single care or anxious thought of the morrow. There stands the old farm house, under the eaves of which the twittering swallows built their nests, and which is partially covered with the trailing vine which climbs so prettily over the porch, lending its fragrance to the evening air. Under this vine father loved to smoke his evening pipe, shaded from the rays of the setting sun by its thick and luxuriant foliage, and mother plied the needles in careless industry as she told us little ones tales of giants and dwarfs and far-off lands. By her side lies the old grey cat rolling over and over with the little kittens that have spied a ball of yarn, and old Jack our faithful house-dog basks in the lingering sunshine as if he too was glad the day's tasks were done.

Then again do we remember the old barn, where we passed so many happy hours tossing the hay about and waiting for father to come in from the field, that we might help him feed the tired team. Well do we recollect Kitty, the faithful old mare, mother's special property, she that had a stall of her own and was so gentle that we youngsters used to feed and pet her and climb about her knees, which we did without fear or danger.

Many a noon have we seen her after her morning's work was over with her nose-bag filled with sweet and golden corn, tossing it impatiently up and down in eagerness to satisfy her appetite, thereby spilling a portion of its contents and drawing about her in numbers the awkward waddling ducks, the king of the barn yard with his handsome crest and spreading tail, while my pets, the pigeons, fluttered round, and even on her head in the vain hope of stealing some of the scattered grain. Of some such scene as this does our illustration remind us.

BECOMING APPRECIATED.—The RURAL PRESS as an advertising medium is now rightly appreciated. It is time that people on this Coast stopped advertising indiscriminately in mis-called "cheap" mediums, and like Eastern advertisers use discretion by advertising in the special mediums which will attract the notice of their particular class of patrons. We are this week obliged to leave over a lot of advertisements, among others are the following from Sacramento, received too late: E. F. Aitken, W. R. Strong, J. S. Harbison, E. Parsons, H. Constine, E. E. Ames. This is a paying season for advertising seeds, trees, plants, etc. etc., on all parts of this Coast.

IMPORTATION OF STOCK.—Mr. W. C. Myer of Ashland, Jackson county, Oregon, importer and breeder of fine stock, writes us from St. Louis, that he has purchased in that city an imported Percheron stallion and mare. The mare took the first premium at the St. Louis fair, and is reported to be the finest Percheron mare in the country. Mr. Myer will also bring with him to Oregon from the East, some Jersey, or Alderney and short-horn cattle, white Brahma fowls, Cotswold sheep, etc. This stock will be sent through as soon as travel opens on the transcontinental railroad.

THE hobby of the Crown Prince of Prussia is agriculture. His farm, near Bradenburg, costs him every year \$50,000; but he has, at all events, the pleasure of telling his guests at the dinner table that he himself raised all the vegetables that are placed on the dinner table.

The Plum.

Few fruits are more beautiful on the tree or more tempting on the table than plums. As a dessert they are everywhere in favor, and extensively used as a preserve. Beauty around us adds to the sum of our happiness, and what can be more beautiful than a well arranged orchard of choice fruit, where, after the fragrant blossoms are gone, we look upon the rich green foliage and watch the slowly developing fruit until it arrives at maturity, presenting us with the choicest of Nature's blessings to man in the form of the golden apple, the luscious peach, the rich pale crimson, deep blue or golden yellow plum, etc.

Plum trees are hardy and easily cultivated. They are especially suited to the genial climate of California, where seldom, if ever, the dreaded "black wart" appears, and where the curculio never insinuates its disgusting presence. Among the choice varieties of this fruit are the Golden Drop, the Imperial, Green and



THE REINE CLAUDE DE BAVEY PLUM.

Purple Gages; the Washington, the Jefferson, and last, though not least, the Reine Claude de Bayey, which being a comparatively new and not a very common plum, we have herewith illustrated.

This variety of plum is as large as the Washington, slightly oval and plump in form, and greenish yellow in color, with stripes and splashes of green, covered with a delicate bloom. In taste it is juicy, melting, sugary, rich and excellent, and separates freely from the stone, which is small. The stem is short and stout, planted in a rather deep cavity, and well calculated to withstand the high summer winds of California. The tree is a vigorous grower, with smooth branches, and large, broad, ovate leaves, with rounded, irregular serratures. It is very vigorous and productive, is of foreign origin, and a valuable addition to our late varieties. It ripens in California the last of September, and hangs long on the tree. Its peculiarities, it will be seen, all point to it as a valuable market plum.

S. W. Moore & Co., No. 420 Sansome street, have a large number of the trees for sale, and advertise in another column.

TO CORRESPONDENTS.—Two communications from "T. W. A. W.," too late for this week; also a note from "H. P.," relative to preserving the unfermented juice of the grape.

Aid to Inventors.

EDITORS PRESS:—The *Manufacturer and Builder* mentions a very useful institution now being organized in New York. San Francisco would, I believe, derive equal benefits from similar associations. It is designed to assist inventors, by giving them a place and the use of tools. There will be committees, to whom inventors may refer their ideas or their models. If the report be favorable, the Society will, in consideration of an interest in the patent rights, advance means to develop them. There will be lecturers and artists skilled in drawing designs and making models; workshops and other apartments, with conveniences for the use of inventors.

The aim will be to enlist all mechanics in the scheme, and to hold regular exhibitions, having the character of Fairs.

This movement has its origin in the widespread dissatisfaction given by the awards of the last Fair of the American Institute.

There is, in the climate of California,

The Rainfall.

The late storm has been one of the most remarkable which has occurred since the advent of the Americans on this coast. For over two weeks, with slight interruptions, it rained more or less of the time, day and night, until the 2d instant. Now, however, the storm seems to have fairly passed away, and at this present writing the sky is beautifully clear and pleasant.

The amount of rain which has fallen has also been remarkable—probably the largest amount which has been recorded in so short a time since 1849—and when added to that which had previously fallen during the season, makes the largest total on record up to December 31st. It may also be added, as another remarkable fact, that no great storm, with an equal rainfall, has done so little damage, or, so far as present appearances show, been productive of such a vast amount of good to the State at large.

The temperature has been exceedingly favorable for both grass and grain—the thermometer in this city marking the high average of 53° for the month of December. The rain has also been general—all over the State—and has fallen so moderately, that the thirsty earth has been able to drink it up to a much greater extent than usual.

It is with unfeigned pleasure, that, in the light of these facts, we look forward to the ensuing year as one of unparalleled productivity and prosperity. Everybody looks smiling and happy, and the customary salutation of the season, as passed around on Monday last, was no unmeaning word; but was uttered with the almost certainty that we all should indeed be happy.

The miners are also rejoicing in view of the abundance of water for mining purposes. The *Territorial Enterprise* says that even though no more rain or snow should fall for the winter, water would be abundant in that vicinity for a year or two to come—a good store of water being laid up in the hills, all of which are great natural reservoirs.

The fall in this city to January 1st has been 20.29 inches. The highest previously noted was in '51 and '52, when 19.31 fell. The fall at other localities is reported as follows:

Sacramento.....	to Dec. 31....	12.42
Stockton.....	" 31....	10.80
San Andreas.....	" 23....	10.89
Turlock (Stanislaus Co.)...	" 31....	8.52
Los Angeles.....	" 30....	8.21
Shasta.....	" 26....	30.25
Nevada.....	" 29....	36.00

A Winter Musk-melon.

In the issue of the *SCIENTIFIC PRESS* of December 3d, 1870, reference was made to a new and singular melon which Mr. R. Marchella, of Oroville, had raised the previous season. They were the only specimens of the kind which had ever been raised in the State, or probably in America, and were the product of about 100 seeds, which had been obtained at much cost and trouble, from some portion of Turkey. The botanical name of the melon is given as *Buchiri*. One of these melons has been left at this office, where it was cut and devoured. It was plucked from the vine some three months previously, but was as sound and perfect as the day on which it was picked, and to all appearance might have been kept for several months longer. The appearance of the melon differs but little from those of the ordinary growth, except that the skin is a little darker and hard, like that of a winter squash, a fact to which is probably chiefly due its keeping quality. If hung up in a dry and cool place, we are informed, it may be kept good the year round. The taste was of a slightly nutmeg-flavor; but the specimen we tried was not so rich as some of the ordinary melons. Its peculiarity and great value consists in the fact that it will furnish a genuine and very good musk-melon for the table the year round; as such it is invaluable, and will no doubt be largely sought for.

A year ago the seed could not have been purchased for love or money—the entire first year's crop being reserved for the importer's own use and propagation. The seeds are for sale at this office.

SHERMAN ISLAND.—We have in hand some notes of a recent trip to Sherman Island, which will appear next week.

THE Yuba river at Marysville, was fully as high on the 29th ult. as during the flood of 1867.

THE FENCE LAW.—A bill for the repeal of the fence law has been introduced into the Legislature, upon which we have an article prepared, but unavoidably crowded out this week.



Ripe Wheat.

Some three years since a lady friend of Eliza O. Crosby, in speaking of the death of a mutual acquaintance, somewhat advanced in years, whose funeral she had recently attended, said: "Among the white flowers in her coffin was a bunch of ripe wheat, and I thought it most beautiful and appropriate." The next day Miss Crosby penned the following lines and sent them to *Moore's Rural New-Yorker*, where they were originally published:

We bent to-day o'er a coffin form,
And our tears fell softly down;
We looked our last on the aged face,
With its look of peace, its patient grace,
And hair like a silver crown.

We touched our own to the clay-cold hands,
From life's long labor at rest;
And among the blossoms white and sweet,
We noted a bunch of golden wheat,
Clasped close to the silent breast.

The blossoms whispered of fadeless bloom,
Of a land where fall no tears;
The ripe wheat told of toil and care,
The patient waiting, the trusting prayer,
The garnered good of the years.

We knew not what work her hands had found,
What rugged places her feet;
What cross was hers, what blackness of night;
We saw but the peace, the blossoms white,
And the bunch of ripened wheat.

As each goes up from the field of earth,
Bearing the treasures of life,
God looks for some gathered grain of good,
From the ripe harvest that shining stood,
But waiting the reaper's knife.

Then labor well, that in death you go
Not only with blossoms sweet—
Not bent with doubt, and burdened with fears,
And dead, dry husks of the wasted years,—
But laden with golden wheat.

Housekeeping Made Easy.

"Majoram" is writing some sketches for the *American Rural Home*, from which we extract as follows:

Nothing which God has made is too humble for our study, no office that He has created too lowly for us to fill. The lowly things of the world are full of meaning, too full for the intellect of man proud as he is of its power, fully to comprehend.

I think, sometimes, the sweet faces of the angels must grow sad, when they behold us casting away these lowly things as worthless and reaching out our hands to the things beyond with which we can not work.

We cannot speak of housekeeping made easy, as but little that is worth doing is easily done, unless we make lovingly a synonym for easily, for it is true that nothing can lighten labor like unto love; yet we can speak of housekeeping made happy.

Housekeeping bears the same relation to the home-life that the basement walls bear to the house. In our home building shall we do less than the old-time architects who build so truly, and for all time, because they build as unto the Lord.

There is many a home the mistress of which must possess infinite tact and patience to direct and control so carefully a retinue of servants. Many are the homes that are less than mansions, much less, and perhaps happier in an equal degree, and in these homes there may be no musical instrument, there may be but few books, and but two or three weekly papers, because these things are not attainable; and the hands and heart grow weary sooner, perhaps, for the lack of these quickeners of the life of the toilers. But dear hearts wait a bit. God never makes mistakes. If He has placed you in a family and given you only a little to do with. It is through these very things that you are to minister to the higher necessities of your dear ones. You are to do your part faithfully, lovingly, and he will do all the rest.

Look! what lovelier household picture than this: At even tide, the strong man with silver threads just beginning to show in his dark hair—the last rays of the setting sun falling upon his bowed head, his family about him with heads bowed low, and brown hands folded reverently while

he asks a blessing on the bread; then the sweet converse that ends the day of toil, and, ah, weary ones, the sweeter rest with the bread that God has blessed making bone and sinew for the morrow's toil.

Shall not the table become the altar of the busy household? Is it, then, a small thing to prepare the sacrifice? We talk much of the hearthstone; let us not forget our fine theories when we spread our tables there. Nine-tenths of the men and women of to-day are what their table training has made them; we have reason to think that the coming men and women will be much the same.

The table is the truest test of the refinement of the household. I do not mean that it shall glitter with plate, or be loaded with expensive wares. This is possible only for the few, but purity in our table service is possible for all. With table linen, no matter how coarse, nicely washed and ironed; pure white ware, knives and forks free from rust and stain; then, if of silver, our table may boast but a dozen spoons, yet it may have an air of refinement if we keep it pure.

Ah, in so many of our homes, perfect cleanliness must take the place of elegance; purity of heart and life must work out our refinement and culture. Are we not happier in having it so? As a people I hope by-and-by we shall come to despise cheap decoration and faintly coloring, plated ware and tinsel; that we shall learn to ornament only that which is worthy of ornamentation. If our service is inexpensive let it be pure.

What! Mary, no napkins! Do you not need them? I see there are gold rings upon your fingers; will you not offer them up as a sacrifice upon the household altar? Unless those rings are the gifts of friends (if so they are sacred) I would take them to the jeweler. I would buy a store of napkins and napkin rings (silver, not plated) with their price; and then I would never wear a ring again, only as I wore it for its true meaning.

Female Taste.

A cultivated taste marks a woman of elegance and refinement as decidedly as a knowledge of classical literature does a gentleman; and there is nothing in which female vulgarity is more clearly shown than in want of taste. This is an axiom that we think will not admit of dispute; but it is a question how far taste is natural, and how far it may be acquired. A delicate taste must to a certain extent depend upon the organization of the individual; and it is impossible for any rules to be laid down which will impart taste to persons entirely devoid of it. But this is very seldom the case with women; as it is one of the few points in which women naturally excel men. Men may be, and probably are, superior to women in all that requires profound thought and general knowledge, but in the arrangement of a house, and the introduction of ornamental furniture and articles of bijouterie, there can be no doubt of the innate superiority of women. Every one must have remarked the difference in the furnishing of a bachelor's house, and one where a lady presides; the thousand little elegances of the latter, though nothing in themselves, adding, like cyphers, prodigiously to the value of the solid articles they are appended to.

LOVE, FORTUNE OR POSITION.—Who marries for love, takes a wife; who marries for fortune, takes a mistress; who marries for position takes a lady. You are loved by your wife, regarded by your mistress, tolerated by your lady. You have a wife for yourself, a mistress for your house and friends, a lady for the world and society. Your wife will agree with you, your mistress will rule you, your lady will manage you. Your wife will take care of your household, your mistress of your house, your lady of appearances. If you are sick your wife will nurse you, your mistress will visit you, your lady will enquire after your health. You take a walk with your wife, a ride with your mistress, and go to a party with your lady. Your wife will share your grief, your mistress your money and your lady your debts. If you die, your wife will weep, your mistress lament, and your lady wear mourning. Which will you have?—*The Christian Union*.

PARENTAL PARTIALITY.—There is a fatal danger in family government, from which we would warn every parent; and that is partiality. It is too often the case that fathers and mothers have their favorite child. From this, two evils result. In the first place, the pet usually becomes a spoiled child; and the "flower of the fam-

ily" seldom yields any other than bitter fruit. In the second place, part of the household feel envy towards the parent who makes the odious distinction. Disunion is thus sown in what ought to be the Eden of life, a sense of wrong is planted by the parent's hand in the hearts of a part of his family, an example of injustice is written on the soul of the offspring, by him who should instill into it by every word and deed, the holy principles of equity.

The Language of Jewels.

Jewels have a language as well as flowers. Among other curious old fancies about them is, that which connects one with each month in the year, and with all who are born in that month.

Thus to January belong the garnet and the jacinth, which preserve the wearer from pestilence and from lightning. To February belongs the amethyst, signifying temperance. It protects the wearer from evil thoughts, and cures or prevents inebriety. The stone of March is the jasper, which cures hemorrhage when worn or applied to a wound. Those born in April should wear the sapphire, significant of purity. To May belongs the agate, which protects from poison and appeases pain. If single in color, it renders the wearer invincible. June has the emerald, significant of hope, teaching the knowledge of secrets, bestowing eloquence and wealth, enjoying thus a proud position. To July belongs the onyx, which excites melancholy and vain terror to the wearer; but fortunately, the month also possesses the cornelian, which cures these evils, and also secures success, particularly in lawsuits. To August belongs the sardonyx, which brings riches to the wearer. To September belongs the chrysolite. To October belongs the beryl, or aqua marina, which renders the wearer successful in navigation, and insures safe voyages. The opal also belongs to this month—astone which unites the colors and qualities of all others, and has been beautifully called, by a poet and artist, "a pearl, with a soul in it." Its meaning is childlike fairness and loveliness. November has the topaz, which signifies courage and cheerfulness. It was supposed to show the presence of poison by loss of color; giving light in the dark, and dispelling enchantment, if worn on the left arm or round the neck. It was also supposed to strengthen intellect and brighten wit. Those whose birthday is in December have choice between the ruby, turquoise or malachite, or can wear all three.

Clerks in New York City.

There is probably nothing more fallacious than the will-o'-the-wisp that is ever alluring our young men into the position of clerk or salesman in a store. Many young men in the country, and in mechanical pursuits in the city, envy them, and are constantly applying for such positions. Misguided, ignorant young men! They see the clerks under the best circumstances. Perhaps, when on their summer trip, with a city outfit, and loaded down with brass jewelry, they make a sensation. But there are no greater drudges in the land. The pay is small and the toil immense. Hundreds of young men who crowd around for some place in the city, don't know what they are after, nor for what they are asking. A few clerks do well, they rise fast and get good pay, but this number is small. These make themselves so useful that they cannot be dispensed with. This class are ready to do any work that turns up, and are cheerful and obliging. The rules of a penitentiary are not more severe than those of our large stores. Employees have to be on hand early to prepare for trade and stay late to do up the work of the day.

Men are marked if late, or if they leave the store. Salesmen have to do the drumming after the store is shut. It is no uncommon thing for salesmen to be out until eleven or twelve o'clock at night drumming in the busy season. The fines for misdirected parcels or errors in change consume sometimes a month's wages. Their pay is small, and the chance of promotion not brilliant. Few die, and none resign who hold lucrative positions; those who clerk it when young, grow old in the same toil. Life is a treadmill, yet a vacancy in the city will be sought for by crowds, and the advertisement for a clerk will be answered by hundreds.—*American Manufacturer*.

They have a maternal association in Paris composed of aristocratic ladies who have agreed to nurse their own children. It numbers at present nearly 200 members.

Young Folks' Column.

Little Bird Talk.

There's a shy little bird of the sparrow size, come to the mulberry harvest. He warbles a fine song, and pays for his fruit in that way. He has a bit of topknot of the brightest red, with a mantle of the same color, somewhat faded, down his shoulders. The female wears a business suit of sober gray and brown. The substance of the song is of that low, sweet species of twiddle, such as Beethoven used for the filling of his country lullabys. You would hear it without listening, and wouldn't know what made you feel so happy, until the higher powers revealed the presence of the tiny songster, spinning his mulberries into harmony from the dimmest recesses of the high tree-top. A movement frightens him off. When last seen they had a fuzzy young one between 'em, whose mouth opened like a tobacco box, for berries that seemed to drop right through him—they disappeared in such quantities and so rapidly. Topknot quit picking. Says he to his mate, with a flutter. "That child will have a summer complaint, as sure as you're alive, if you don't stop a stuffin' on him!" And then he hid himself in the branches and commenced to whistle and trill, and tell how badly he should feel if the little one should sicken, and fade away—you couldn't hear him without a whimper—and wound up with something that sounded like "short feed—short feed for little chaps for a month or two—for a month or two!"

LITTLE BROTHERS.—Sisters, do not turn off your younger brothers as if they were always in your way, and any service which they might ask of you were a burden. Perhaps the hour may come when over a coffin that looks strangely longer than you thought, and over a pale brow where often half unwittingly, and perhaps with a petulant push, you parted the hair—you bend with tears and sobs that shake your very soul, while remorseful memory is busy with the by-gone hours. You will wish then that when he came and asked you to help him in his play, or to lift him on your lap because he was tired, or to take him out because he wanted to see, you had laid aside your book and made the little heart glad.

Spice-Box.

Why are pen-makers the most dishonorable people in the world? Because they make people steel pens and say they do write.

"Tom, who did you say our friend B. married?" "Well, he married \$10,000—I forgot her other name."

A DEPUTY SHERIFF in Oregon, hearing that poultices were good cures for felons, went into the county jail and poured a kettle of cold wash all over a horse-thief.

"GRANDMA," said a shrewd child, "do you want some candy?" "Yes, dear, I should like some." "Then, if you'll buy some, I'll give you half," said Polly.

"PETER," said a shrewd mother to her son, "are you into them sweetmeats again?" "No, ma'am, them sweetmeats is into me."

A CLERK in a post office was a little embarrassed the other day, on being asked by a lady if there was a letter for my cow. Being disposed to treat her politely, he replied that there was no letter for anybody's cow. The lady being equally embarrassed, and also disposed to be polite, said she inquired for Mike Howe.

A BOY'S ARGUMENT.—A boy having broken his rocking-horse the day it was bought, his mother began to rebuke him, and to threaten to box his ears. He silenced her by inquiring "What is the use of a good horse till it's broke?"

Charade.

My first is a wen spelled backward.
My second is a very heavy weight.
My third is a Turkish eating stand.
My whole the name of a noted man in California.

Do not talk about yourself to the exclusion of all other topics. What if you are clever and a little more so than any other person, it may not be that other folks will think so, whatever they ought to do.

ANSWERS TO LAST WEEK'S CHARADE, AND RIDDLES.—Charade—Grace Greenwood. Riddle—Letter I.

A splendid lot of puzzles next week.

DOMESTIC ECONOMY.

Hard Beds.

The preference for hard beds as being more healthy than soft ones, is worthy only of those who have settled down into a Diogenes-in-the-tub life. It is true a tired person will sleep soundly on a hard bed, and habit may make such a bed acceptable; but whoever has felt the almost human kindness and warmth of a soft hair mattress, cannot go back to husks and straw without a pang. Let us look at the matter physiologically. The spinal column is composed of 24 pieces of bone fastened together by cartilage, with a little cushion of highly elastic cartilage nicely fitted in between each to prevent friction and permit perfect freedom of movement. The spine is not straight but curves in, as every body knows, at the small of the back and curves out again. In a perfect bed every part of this vertebral column will be supported, but in a hard, unyielding surface this is not possible. One portion of the body rests firmly on the bed beneath it, while another in a line with it receives no support. Sleep on such a bed will not restore the wearied frame nearly so well as repose on an elastic couch where every part of the body is equally supported. We do not recommend softness but elasticity.

Feathers, except in very cold weather, are unwholesome, because they retain an excess of warmth about the body, and also because they absorb the insensible perspiration thrown off by the pores, and permit the body to re-absorb the excrementitious matter. A bed of soft, fresh straw, evenly distributed and covered with a thin cotton or woolen mattress, may be a good resting place, and furnish sweet sleep. But how can man or woman rise refreshed from a couch of straw or a shuck mattress which has been in nightly use without renewal for a series of years? Yet there are portions of this very land of plenty where travelers are put to sleep upon just such beds as this.

Every man in grazing districts may own a dozen or two coarse woolen sheep. These and their increase will in a short time give him wool mattresses than which none are more pleasant, more wholesome, or durable. The tag-locks washed and carded should be hoarded by every farmer's wife for this purpose. In cities and villages, and in the more populous parts of our country, those who can afford good sleeping places generally have them. The degree of refinement and cultivation, as well as wealth one has attained, may be easily read by one glance at their sleeping apartment.

How to Cook a BEEFSTEAK.—A beefsteak is always best broiled; but the following method is recommended by a lady writer, when broiling is not convenient:

The frying pan being wiped dry, place it upon the stove and let it become hot. In the meantime the steak—if it chance to be a sirloin so much the better—pepper and salt it, then lay it on the hot, dry pan, which instantly cover as tight as possible. When the raw flesh touches the heated pan, of course it seethes and adheres to it, but in few seconds it becomes loosened and juicy. Every half minute turn the steak; but be careful to keep it as much as possible under cover. When nearly done lay a small piece of butter upon it, and if you want much gravy add a tablespoonful of strong coffee. This makes the most delicious, delicately broiled steak, full of juice, yet retaining the healthy, beef flavor that any John Bull could require. The same method may be applied to mutton chops, or ham, only they require more cooking to prevent them from being rare. An excellent gravy may be made by adding a little cream, thickened by a pinch of flour, into which, when off the fire and partially cool, stir the yolk of an egg well beaten.

IMPORTANCE OF COOKERY.—The preparation and cooking of food should receive its proper share of attention, if the greatest amount of benefit is to be derived from its introduction in the system. Blot, the professor of this art, says that green vegetables, such as cabbage, spinach, etc., should be put in boiling water, but dry vegetables, as beans and peas should be put in cold water to cook, after having been previously soaked in lukewarm water. In the case of potatoes, the eyes or germs are to be cut out, and the skin rubbed or scraped off, then steamed or roasted. He thinks that fish, although containing twenty per cent. of nutritious matter,

ought to be partaken of at least twice a week, as it contains more phosphorus than any other food, and serves to supply the waste of that substance in the system, and particularly of the brain.

Prevention of Dampness.

Dampness in walls is often a great annoyance to housekeepers, and in moist climates good precautions should be taken to keep it out of the walls and buildings. It may be prevented from rising in brick or stone walls by a thorough application of asphaltum to the upper portion of the foundation, or to several of the lower tiers of bricks. Asphaltum thoroughly applied to the outside of brick work will also prevent the ingress of dampness. The walls may be painted over the asphaltum, if desired.

Another method is also recommended by a leading scientific paper as follows:—Three-quarters of a pound of mottled soap are to be dissolved with one gallon of boiling water, and the hot solution spread steadily with a flat brush over the outer surface of the brickwork, taking care that it does not lather; this is to be allowed to dry for twenty-four hours, when a solution formed of a quarter of a pound of alum dissolved in two gallons of water is to be applied in a similar manner over the coating of soap. The operation should be performed in dry, settled weather. The soap and alum mutually decompose each other, and form an insoluble varnish which the rain is unable to penetrate, and this cause of dampness is thus effectually removed.

Alum is also a valuable prevention of mildew. Cloths or other fabrics dipped into strong alum water, are proof against mildew, no matter how much they may afterwards be exposed to damps or other causes favoring the growth of this disagreeable fungus.

About a year ago, says a correspondent of the *Journal of Chemistry*, I was filling up a large scrap-book, and in the course of my work used, in connection with a goodly amount of paste, a small quantity that had alum in it. A spell of wet weather coming on before my book was dry, caused it to mildew badly throughout, except where the alum paste had been used; there, no trace of mildew was to be seen. Upon observing this, I began trying various experiments with alum as a mildew preventive, all of which succeeded, though put to the most severe tests. I therefore feel that I have, by the merest accident, made a valuable discovery, and as such I take pleasure in offering it to the public.

THE ROAST TURKEY.—Here is the New England method: Select a fine, plump, yellow-skinned turkey, weighing from ten to twelve pounds. Examine it thoroughly to see that all the pin feathers are taken out; hold it over a blaze to singe any fine hairs that may remain; wash it thoroughly inside and out, and rub it over with salt. Take the gizzard, heart and liver, put them into cold water, and let them boil until tender. When done, chop them very fine. Take stale bread, or the large Boston crackers, and grate or chop them. Add salt, pepper, and some sweet herb, if liked, to the bread crumbs; after which beat up two eggs with which to moisten the crumbs; add and mix thoroughly with this the chopped "inwards," not forgetting to put in salt and butter. Fill the inside of the turkey with the dressing, taking care that the neck and crop is made to look plump, and sew the openings, drawing the skin tightly together. Then rub a little butter over your turkey, and lay it upon the grate of your meat pan. Cover the bottom of the pan well with boiling water. After a half hour baste the turkey by pouring over it the gravy that has begun to form in the pan. Repeat the basting once in about fifteen minutes. In an oven of average temperature a 12-pound turkey will require at least three hours; but every oven has its own way of baking, and the cook must be governed by it.—*Hearth and Home.*

THE ROAST GOOSE is to be prepared in the same manner as the turkey. The dressing should be made of mashed potatoes, seasoned with salt, pepper and sage, or onions, if according to the taste of the family. Make giblet sauce by boiling the "inwards" until very tender, chopping them fine, and adding them to a gravy made by using the liquor in which they were boiled, thickened with flour, and to which has been added one ounce of butter, and pepper and salt to suit the taste.—*Hearth and Home.*

Domestic Receipts.

A RELISH FOR BREAKFAST OR LUNCH.—Take a quarter of a pound of cheese, good and fresh; cut it up in thin slices, and put in a "spider," turning over it a large cupful of sweet milk; add a quarter of a teaspoonful of dry mustard, a dash of pepper, a little salt, and a piece of butter as large as a butternut; stir the mixture all the time. Have at hand three Boston crackers finely pounded or rolled, and sprinkle them in gradually; as soon as they are stirred in, turn out the contents into a warm dish and serve. It is very delicious.

How to COOK ONIONS.—Peel, wash and put them into boiling milk, and water (water alone will do, but it is not so good) when nearly tender, salt them; when tender, take them up, pepper them and put some butter on them, and they are ready for use.

Take large onions and parboil them; roast them before a fire with their skins on, turning as they require; peel, and send them to the table whole; serve with melted butter. Peel, slice, and fry them brown, in butter or dripping.

BLACKING FOR LADIES' AND CHILDREN'S SHOES. Take good black ink, and mix with dissolved gum arabic. Apply with a brush or sponge. This gives a beautiful new appearance to morocco shoes that have become a little rusty.

FRENCH MODE OF PRESERVING EGGS.—Dissolve four ounces of beeswax in eight ounces of olive oil; in this put the tip of the finger and anoint the egg all around. The oil will immediately be absorbed by the shell, and the pores filled up by the wax. If kept in a cool place, the eggs after two years will be as good as if fresh laid.

FRUIT CAKE.—Two cups sorghum, one of butter, four of eggs; four of flour, one teaspoonful of soda, one pound of raisins, one pound of Zante currants, one tablespoonful cloves, cinnamon and nutmeg; a little French brandy improves it. Seed the raisins, and rub an extra cup of flour through them.

Mechanical Hints.

THE USE OF SCREWS.—Mechanics generally drive screws into wood without any precaution. But in cabinet and all other fine work, especially, it would be well to use certain precautions which are given as follows in the *Manufacturer and Builder*:—When the wood is very hard, it may ease the labor of getting the screw home when you grease it; and when you expect that the screw will some time have to be taken out, it is well to grease or oil it, to prevent it rusting. Also when the object is exposed to dampness, screws should be protected in this way. When the wood is very soft, or when some strain may cause the screws to work loose, warm them, dip them in melted glue, and also put a few drops of glue in the hole. The latter is useful when in repairing an article it is found that the holes are rather large. If you cannot get other screws large enough to fill the hole, use a wooden plug inserted with glue, and make a new hole in the plug or next to it. If the objects are exposed to dampness, apply powdered resin, the only precaution being to heat the screw sufficiently to melt the resin. If you want the screws to stick so fast that they can not be got out without breaking, put some vinegar or other suitable acid in the hole, which will rust them in.

COLORS FOR CEMENTS.—A writer in *Comptes Rendus* states that colored cements which harden rapidly may be made as follows: He takes a solution of silicate of soda (sp. gr. 1.298) and adds to it, while stirring, first pulverized and previously washed, lixiviated chalk, so as to form a thick mass like butter, to which are added, for coloring purposes, the following substances: Finely pulverized sulphuret of antimony for black, iron filings for gray, zinc dust for whitish gray, carbonate of copper for bright green, oxide of chromium for deep green, cobalt blue for blue, red lead for orange, vermilion for bright red, and carmine for a violet blue. This cement hardens within from six to eight hours, and may afterward be polished, becoming like marble.

ALLOY OF COPPER AND CAST IRON.—The alloy of equal parts of copper and cast iron, introduced by Soret, is not as well known as it deserves to be. It has the appearance of zinc, is much harder than copper, and tougher than cast iron. In casting it does not adhere to the forms; it does not rust in the air; and it may be used successfully for many parts of machinery, statues, etc. After casting, it may be easily electroplated, or the copper may be exposed by dissolving the iron from the surface with a suitable acid.

LIFE THOUGHTS.

TRIFLE not with serious matters, and be not serious about trifles.

HANDLE rough-sided men carefully. It pays to take a little time when you are opening chestnut-burns.

HE who has not forgiven an enemy has never yet tasted one of the most sublime enjoyments of life.

MOST of the shadows that cross our path through life are caused by standing in our own light.

THE universe, as it unfolds itself to Christian eye, presents no marks of a sparse and narrow design.

WE cannot conquer fate and necessity, yet we can yield to them in such a manner as to be greater than if we could.

CHARITY, like the sun, brightens, every object on which it shines; a censorious disposition casts every character into the darkest shade it will bear.

IT is impossible to make men understand their ignorance; for it requires knowledge to perceive; and therefore he that can perceive it, hath it not.

IT seldom happens that any period of human existence, whether extensive or contracted, passes by without some circumstances occurring calculated to produce painful sensations.

THERE is no worse robber than a bad book. Other robbers may despoil us of our money, but a bad book robs us of our faith, our purity of heart—of all we value most. Young reader, beware of bad books.

PURE THINGS.—There is nothing purer than honesty, nothing sweeter than charity, nothing warmer than love, nothing brighter than virtue, and nothing more steadfast than faith. These united in one mind form the purest, the sweetest, the richest, the brightest, the holiest and the most steadfast faith.

The Way to Succeed.

Fortune, success, position are never gained but by piously, determinedly, bravely striking, growing, living to a thing till it is fairly accomplished. In short, you must carry a thing through if you want to be anybody or anything, no matter if it does cost you the pleasure, the society and the thousand pearly gratifications of life. No matter for these. Stick to the thing and carry it through. Believe you were made for the matter, and that no one else can do it. Put forth your whole energies. Be awake, electrify yourself, and go forth to the task. Only once learn to carry through a thing in all its completeness and proportion, and you will become a hero. You will think better of yourself, others will think better of you. The world in its very heart admires the stern and determined doer. It sees in him its best sight, its brightest object, its richest treasure. Drive right along, then, in whatever you undertake, and consider yourself amply sufficient for the deed. You will be successful.

BUILDING CHARACTER.—There is a structure which everybody is building, young and old, each one for himself. It is called character, and in every act of life is a stone. If day by day we be careful to build our lives with pure, noble, upright deeds, at the end will stand a fair temple, honored by God and man. But, as one leak will sink a ship, and one flaw break a chain, so one mean, dishonorable, untruthful act or word will forever leave its impress and work its influence on our character. Then let the several deeds unite to form a day and one by one the days grow into noble years, and the years, as they slowly pass will raise at last a beautiful edifice, enduring forever to our praise.

HAVE the courage to give occasionally, that which you can ill afford to spare, giving what you do not want nor value, neither brings nor deserves thanks in return; who is grateful for a drink of water from another's overflowing well, however delicious the draught? Have the courage to wear your old garments till you can pay for new ones.

WHAT a glorious world this would be if all its inhabitants could say, with Shakespeare's shepherd: "Sir, I am a true laborer; earn what I wear; I owe no man hate; envy no man's happiness; glad of other men's good; content with my farm."

WE should never throw out against a man broken hints and dark innuendoes, which would leave the hearers to suspect anything and everything that ill-nature can suggest.

RAIN TABLE.

We publish below the monthly rainfall at Sacramento, from the year 1849, including 1871. The average rainfall at that point is about 20 inches, and it will be seen from the table that up to Jan. 1st, of this year, within 7 1/4 inches of this total had fallen. As the mean amount of rainfall for January is 3 1/2 inches, and the maximum 15 inches, we may calculate with a degree of certainty of having more than the average quantity of rain this season.

We give this table that our readers may use it for reference, and will republish it with additions, at some future time.

RAIN TABLE FOR SACRAMENTO.—PREPARED BY DR. T. M. LOGAN.—FOR THE PRESS.																									
Arranged according to the seasons, showing the amount in inches of each month, during twenty-two years, and for each rainy season, including the present, to January 1st.																									
1	MONTHS.																								
	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	
September.....	0.250	0.000	0.000	0.003	0.000	sp Kc	sp Kc	sp Kc	sp Kc	0.000	sp Kc	0.025	0.003	0.000	0.000	0.003	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	
October.....	1.500	0.000	0.180	0.000	0.006	1.010	0.000	0.105	0.635	3.010	0.000	0.000	0.613	sp Kc	0.355	0.000	0.000	0.130	0.480	0.001	0.000	0.000	0.000	0.000	
November.....	2.250	sp Kc	0.600	1.500	0.550	0.750	0.000	0.200	2.406	0.147	6.485	1.884	2.170	0.005	1.005	6.718	2.427	2.435	3.806	0.774	0.000	0.000	0.584	1.250	0.000
December.....	12.500	sp Kc	7.010	13.410	1.540	1.150	2.000	2.386	6.632	4.329	1.845	4.282	8.617	2.927	1.815	7.867	0.364	9.511	12.830	0.000	0.000	0.000	0.000	0.000	
Total for each year to Jan. 1st.	16.500	00.000	10.380	19.413	4.045	2.810	2.750	3.226	9.693	7.486	8.344	6.440	10.807	2.087	3.306	14.709	3.351	11.398	16.636	3.386	4.993	1.375	12.413	0.000	
MONTHS.																									
	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872		
January.....	4.500	0.650	0.120	3.400	3.550	2.670	4.919	1.375	2.444	0.904	2.310	2.668	15.036	1.738	1.077	7.689	3.440	3.187	4.750	1.371	1.875	0.000	0.000	0.000	
February.....	0.500	0.000	0.590	0.000	8.800	4.260	0.682	4.801	2.461	3.906	0.931	2.668	4.260	2.751	2.000	4.712	0.702	3.145	3.620	3.236	1.919	0.000	0.000	0.000	
March.....	10.000	1.850	0.130	2.000	3.550	4.260	1.403	0.675	2.878	1.637	5.110	3.320	2.800	2.360	1.000	4.841	2.018	1.010	4.385	2.942	1.642	0.000	0.000	0.000	
April.....	4.250	1.140	0.190	3.300	1.500	4.380	2.132	sp Kc	1.214	0.981	2.874	0.475	0.821	1.093	1.060	1.370	1.805	0.216	1.240	1.094	0.000	0.000	0.000	0.000	
May.....	0.250	0.650	0.300	1.450	0.000	1.150	1.841	sp Kc	0.203	1.037	2.491	0.590	1.808	0.355	0.187	0.400	0.202	0.000	0.270	0.648	0.270	0.556	0.000	0.000	
June.....	0.000	0.000	0.000	0.101	0.310	0.033	0.350	0.008	0.000	0.017	0.135	0.011	0.000	0.000	0.000	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
July.....	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.349	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
August.....	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Total.....	36.000	4.710	17.980	36.502	20.086	18.620	13.770	10.483	18.991	15.051	22.626	15.548	38.549	11.570	7.868	22.512	17.924	25.305	32.759	16.644	8.639	6.004	0.000	0.000	

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Jan. 4.

FLOUR—We note a fair local demand with a good enquiry for export. Sales reported embrace 4,000 bbls. Cal. extra, 1,500 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.75@6.00; extra, in sacks, of 196 lbs. \$7.00. Standard Oregon brands, extra may be quoted at \$7.00.

WHEAT—In limited demand, and but little inquiry for export. Prices show a further decline. Sales aggregate 8,000 sacks fair to choice at \$2.20@2.30 100 lbs. Quotable at close at \$2.00@2.25 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 6d. per cental.

BARLEY—Has been very quiet during the past week, at a decline in prices. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.70@1.90, which is the range at close.

OATS—Market has been inactive during the week under review. Sales 2,000 sacks ordinary coast to choice bay, at \$1.75@1.90. Quotable at close at \$1.75 and 1.90 per 100 lbs.

CORN—Is quotable at 2.15@2.25 for yellow and white respectively 100 lbs.

CORNMEAL—Is quotable at \$2.75@3.25 from the mill.

BUCKWHEAT—Is dull at \$2.50.

RYE—According to quality is quotable at \$2.37@2.40.

STRAW—Quotable at \$7.00@8.00 by the cargo.

BRAN—Selling at \$31 per ton from the mill.

MIDDINGS—For feed, are selling at \$42.50 per ton from mills.

OIL CAKE MEAL—In good demand at \$40 from the mill.

HAY—Receipts have been light, and prices at close are \$16@23 for fair to choice 1 ton.

HONEY—We quote Los Angeles comb at 12 1/2@15c. Potter's in 2-lb cans, \$4 per doz.

BEESWAX—In good demand at 40c 1 lb.

POTATOES—Market has been quite dull during past week. Different qualities are selling at 60@90c.

SWEET POTATOES—Are selling at \$2.00@2.25 100 lbs.

HOPS—The range is 45@65c.

HIDES—During past week 850 Cal. dry sold at 18@19 and 1,080 salted at 8@9 1/2c.

WOOL—There is a renewed activity in this article and burry is now saleable; sales of 237,000 lbs. are reported at full rates. Prices for good to choice shipping grades are 22@26c. Sales of extra choice at 27@28c.

TALLOW—Market quiet at 8 1/2@9 1/2c 1 lb.

SEEDS—Flax 3c; Canary, 5@7c; Alfalfa, 15@17c; Mustard—California Brown, 3@6c; Cal. White 3 1/2@4 1/2c 1 lb.

PROVISIONS—California Bacon 13 1/2@14c; Oregon, 14 1/2@15c; Eastern do. 13 1/2@14c; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14@15 1/2; Oregon, 15 1/2@16c; California Sugar-cured Hams, 16 1/2@17c; Oregon do. 17@18c; Eastern do. 18@20c; California Smoked Beef, 13 1/2@14c.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; small Butter \$2.50@2.75; large \$3.00@3.25; Pink \$3; Bayo, \$3.40@3.60; Navy \$3.50 100 lbs.

ONIONS—Fair to choice Silverskins \$1.00@1.50 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@7c; Pecan, 25c 1 lb Walnuts, new, 12 1/2c; Hickory, 12c; Brazil, 16c; Chili Walnuts 10c; Eastern Chestnuts 15c; Cocoanuts \$6.00 100.

COFFEE—Costa Rica 21c; Guatemala 20c; Java, 25 1/2c; Mauilla, 19 1/2; Rio 19 1/2@20. Ground Coffee in cases 30c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 100 lbs; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00 100 lbs; Mace \$1.50 1 lb; Ginger 15c 1 lb.

FRESH MEAT—Market has remained firm since last report. We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 10@11c 1 lb. do. 2d quality 9@10c 1 lb.; do. 3d do. 7@8c.

VEAL—Quotable at 9@12c.

MUTTON—9@12 1/2c 1 lb.

LAMB—12 1/2c 1 lb.

PORK—Undressed grain-fed is quotable at 5 1/2@6 1/2c. dressed, grain-fed, 8 1/2@9c.

POULTRY—Live Turkeys, 20@21c 1 lb. dressed, 22@25c; Hens and large Roosters, \$9.00; Spring Chickens, \$7.00 @ 8.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, \$15@18 1/2 doz.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50; Rabbits, \$1.25@1.50; Quail, \$1.75@1.87 1/2; English Snipe, \$1.75@2.00; Mallard Ducks, \$3.00@3.50; Small Ducks, \$1.50; Wild Geese 1/2 doz. \$1.50@3.00; Terrapin 1/2 doz., \$2.00@2.50.

DAIRY PRODUCTS—California Butter, common to good in rolls, may be quoted at 40@50c; California firkin butter, 27 1/2@32 1/2c. Pickled 25@32 1/2. Eastern firkin 20@30c.

CHEESE—California 15@19c, Eastern, 16@17c. Eggs—California fresh, 65@70c. 1/2 doz.

LARD—California 12 1/2@13 1/2; Oregon in bbls. and kegs 12 1/2@13c; Eastern in cases 14 1/2@15 do in tes. 12 1/2@13.

FRUIT.

Mexican Oranges,.....	\$25 00	@ 35 00
California do.....	20 00	@ 25 00
Limes, 1,000.....	8 00	@ 10 00
Australian Lemons, 100.....	4 00	@ —
do 1/2 box.....	8 00	@ 10 00
California do, 100.....	2 00	@ 2 50
Bananas, 1/2 bunch.....	2 50	@ 3 50
Apples, eating, 1/2 box.....	1 00	@ 2 00
do cooking do.....	75	@ 1 00
Pears, cooking, 1/2 box.....	75	@ 2 50

DRIED FRUIT.

Apples, 1/2 lb.....	6 @ 7
Pears, 1/2 lb.....	8 @ 10
Peaches, 1/2 lb.....	8 @ 9
Apricots, 1/2 lb.....	8 @ 9 1/2
Plums, 1/2 lb.....	6 @ 8
Pitted do, 1/2 lb.....	20 @ 22
Raisins, 1/2 lb.....	10 @ 15
Black Figs, 1/2 lb.....	8 @ 12 1/2
White do.....	15 @ 20

VEGETABLES.

Cabbage, 1/2 lb.....	1 1/2 @ 1 1/2
Garlic, 1/2 lb.....	1 @
Marrowfat Squash, per ton.....	9 00 @ 10 00

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a good demand for seasonable articles under this head, the rains having given an impetus to the trade.

BAGS AND BAGGING—There is no demand at present, and prices in consequence are largely nominal.

BOOTS AND SHOES—There has continued during the past week only a moderate demand for seasonable goods at unchanged rates.

BUILDING AND FENCING MATERIALS—The local trade has been fair, and only moderate demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do. dressed \$30; Spruce \$17@18; Redwood \$16@ \$30, for rough and dressed. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic,.....	\$31 00	to \$32 50
Refuse do do.....	20 00	to 21 50
Merchantable surfaced and rough clear.....	28 00	to 30 00
Refuse surfaced and rough.....	18 00	to 20 00
Merchantable beaded flooring.....	28 00	to 30 00
Refuse do do.....	18 00	to 20 00
Merchantable rough.....	15 00	to 16 00
Refuse do do.....	11 00	to 12 00
Fancy Pickets.....	22 50	to 25 00
Rough Pickets.....	15 00	to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@ \$20 for flooring.

FISH—We quote Pacific Dry Cod in bundles at 5c, and in cases at 8@8 1/2c; Salmon, in bbls. \$5.50@7.50, hf do. \$3.50@4.50; Case Salmon, \$2@3 1/2 doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, uew, per rail, \$12; do in kits, \$3; extra mess do, \$5; No. 1, via Cape Horn, \$8@10 for hf bbls and \$2.50 for kits; Smoked Salmon, 7@7 1/2c per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sell at \$1.50 100 ream.

PAINTS—We quote White Lead at 10@12 1/2c; Whitening, 2c; Chalk 2 1/2c 1 lb.

RICE—Sales of China No. 1 at 8 1/2@8 3/4c and No. 2 at 7@8c 1 lb; Siam, quotable at 7@7 1/2c in mats; Carolina, 10c; Hawaiian Table, 9c per lb.

SUGAR—We quote Cal. Cube at 14 1/2c; Circle A Crushed, 14 1/2c, and Granulated 14c; Yellow Coffee and Golden C, 12 1/2@13c; Hawaiian 8@12c as extremes 1 lb.

SYRUP—Prices may be given as follows: 82 1/2c in bbls, 85 in hf bbls, and 90c in kegs.

SALT—California Bay sells at \$5@15; Carmel Island, in bulk, \$13; Liverpool Coarse, \$18@20; do Stoved, \$22.50 1 ton.

SOAP—The prices for local brands at 5@10c, and Castile at 11 1/2@12 1/2c 1 lb.

TEA—We quote Hyson at 60@75c; Gunpowder and Imperial, 95c@1.05; Young Hyson and Moyune, 90c@1.15; Foo Chow Oolong, 50@90c; Ponchong, 37 1/2@45c; Souchong, 50@75c; Japan 40@75c. 1 lb.

San Francisco Metal Market.

[Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, January 4th, 1871		
IRON.—Duty: Pig, \$7 1/2 ton; Railroad, 60c 100 lbs; Bar, 1 1/2@1 3/4c 1 lb; Sheet, polished, 3c 1 lb; common, 1 1/2@1 3/4c 1 lb; Plate, 1 1/2@1 3/4c 1 lb; Galvanized, 2 1/2@2 3/4c 1 lb; Scotch and English Pig Iron, 1/2 ton.....\$52 50 @ 55 00		
White Pig, 1/2 ton.....	45 00	@ —
Refined Bar, had assortment, 1/2 lb.....	04	@ — 05
Refined Bar, good assortment, 1/2 lb.....	05	@ — 06
Boiler, No. 1 to 4.....	05	@ —
Plate, No. 5 to 9.....	05	@ — 05
Sheet, No. 10 to 13.....	05	@ — 05
Sheet, No. 14 to 20.....	06	@ —
Sheet, No. 24 to 27.....	06	@ —
Horse Shoes.....	7 50	@ —
Nail Rod.....	9	@ —
Roller Iron.....	7 1/2	@ —
Other Irons for Blacksmiths, Miners, etc. 5 @ 6		
COPPER.—Duty: Sheet, 3 1/2c 1 lb; Pig and Bar, 2 1/2c 1 lb.		
Sheathing, 1/2 lb.....	24	@ — 25
Sheathing, Yellow.....	24	@ — 25
Sheathing, Old Yellow.....	11	@ — 11 1/2
Composition Nails.....	24	@ —
Composition Bolts.....	24	@ —
TIN PLATES.—Duty: 25 per cent. ad valorem.		
Plates, Charcoal, 1 1/2 box.....	12 00	@ —
Plates, 1 C Charcoal.....	10 00	@ 10 50
Roofing Plates.....	11 00	@ —
Banca Tin, Slabs, 1/2 lb.....	—	@ — 45
STEEL.—English Cast, 1/2 lb.....	16	@ — 17
Drill.....	16	@ — 17
Flat Bar.....	17	@ — 20
Plough Points.....	3 75	@ —
Russia (for mould boards).....	12 1/2	@ —
QUICKSILVER.—1/2 lb.....	—	@ — 65
LEAD.—Pig, 1/2 lb.....	05 1/2	@ — 06 1/2
Sheet.....	9	@ — 9 1/2
Pipe.....	10	@ — 10 1/2
Bar.....	08	@ — 09
ZINC.—Sheets, 1/2 lb.....	10	@ — 10 1/2
BORAX.—Refined.....	25	@ — 30
Borax, crude.....	5	@ —

TRAVIS & WAGNER, 41 First St.—Mill Stones, Bolting Cloths and general Mill Furnishing, Portable Mills of all sizes from 16 to 26 in. None superior made for farmers & ranchmen.

San Francisco Retail Market Rates.

THURSDAY NOON, January 4th, 1871.

MISCELLANEOUS.

Butter, Cal. fr. do.....	70 @ 75
Pickled, Cal. do.....	40 @ 45
do Oregon, do.....	25 @ 30
Honey, 1/2 lb.....	25 @ 30
Cheese, 1/2 lb.....	20 @ 25
Eggs, 1/2 doz.....	18 @ 20
Lard, 1/2 lb.....	10 @ 12
Sugar, cr., 6 1/2 lb.....	10 @ 12
Beet, do.....	10 @ 12
Plums, dried, 1/2 lb.....	25 @ 30
Peaches, dried, 1/2 lb.....	15 @ 20
Wool Sacks, new.....	67 1/2 @ 70
Second-hand do.....	67 1/2 @ 70

PRODUCE, ETC.

Flour, ex. 1/2 bbl.....	50 @ —
Superfine, do.....	50 @ —
Corn Meal, 100 lb.....	30 @ 35
Oats, 100 lb.....	15 @ 17

FRUITS, VEGETABLES, ETC.

Pine Apples, 1/2 doz.....	20 @ 25
Bananas, 1/2 doz.....	20 @ 25
Cal. Walnuts, 1/2 doz.....	20 @ 25
Cranberries, 1/2 doz.....	12 @ 15
Pears, table, 1/2 doz.....	12 @ 15
Plums, Cherry, 1/2 doz.....	12 @ 15
Oranges, 100 lb.....	30 @ 35
Lemons, 100 lb.....	50 @ 55
Limes, per 100.....	1 50 @ 1 50
Figs, dried, 1/2 lb.....	10 @ 12
Asparagus, wh.....	50 @ 55
Artichokes, doz.....	50 @ 55
Brussels sprouts.....	20 @ 25
Beets, 1/2 doz.....	10 @ 12
Potatoes, 1/2 lb.....	2 @ 3
Potatoes, sweet.....	2 @ 3
Broccoli, 1/2 doz.....	10 @ 12
Cauliflower, 1/2 doz.....	10 @ 12
Cabbage, 1/2 doz.....	75 @ 80
Carrots, 1/2 doz.....	10 @ 12
Celery, 1/2 doz.....	75 @ 80

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece.....	87 1/2 @ 1 00
Turkeys, 1/2 lb.....	25 @ 30
Ducks, wild, 1/2 lb.....	50 @ 60
Tame, do.....	1 50 @ 1 75
Teal, 1/2 doz.....	5 00 @ 5 00
Geese, wild, pair.....	75 @ 100
Tame, pair.....	2 50 @ 3 00
Hens, each.....	75 @ 100
Snipe, 1/2 doz.....	1 50 @ 2 00
English, do.....	2 50 @ 3 00
Quails, 1/2 doz.....	2 50 @ 3 00
Pigeons, dom, doz.....	60 @ 70
Wild, do.....	1 50 @ 2 00
Hares, each.....	40 @ 50
Rabbits, tame.....	50 @ 60
Wild, do.....	40 @ 50
Squirrel, 1/2 lb.....	25 @ 30
Beef, tenn, 1/2 lb.....	20 @ 25
Corned, 1/2 lb.....	10 @ 12
Smoked, 1/2 lb.....	15 @ 18
Pork, rib, etc., 1/2 lb.....	12 1/2 @ 15
Chops, do.....	15 @ 20
Veal, 1/2 lb.....	15 @ 20
Cutlet, do.....	15 @ 20
Mutton chops.....	15 @ 18
Leg, 1/2 lb.....	15 @ 18
Lamb, 1/2 lb.....	15 @ 18
Tongues, beef, ea.....	15 @ 20
Tongues, pig, ea.....	15 @ 20
Bacon, Cal., 1/2 lb.....	18 @ 20
Oregon, do.....	18 @ 20
Hams, Cal., 1/2 lb.....	18 @ 20

* Per lb. † Per dozen. ‡ Per gallon.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, January 4.

SOLE LEATHER—The demand is still equal to the supply, and prices still continue firm. City Tanned Leather, 1/2 lb.....26@29 Santa Cruz Leather, 1/2 lb.....26@29 Country Leather, 1/2 lb.....25@28 The market is well supplied with French stocks, and prices have a downward tendency. Heavy California skins are firm, with an upward tendency.

Jodot, 8 Kil., per doz.....	\$50 00 @
Jodot, 11 to 19 Kil., per doz.....	76 00 @ 95 00
Jodot, second choice, 11 to 15 Kil., 1/2 doz.....	60 00 @ 80 00
Leone, 15 to 19 Kil., 1/2 doz.....	60 00 @ 80 00
Levin, 12 and 13 Kil., per doz.....	65 00 @ 70 00
Cornellian, 16 Kil., per doz.....	72 00 @
Cornellian, 12 to 14 Kil., per doz.....	65 00 @ 70 00
Ogerau Cal., 1/2 doz.....	54 00 @
Simon, 18 Kil., 1/2 doz.....	65 00 @
Simon, 20 Kil., 1/2 doz.....	68 00 @
Simon, 24 Kil., 1/2 doz.....	72 00 @
Robert Calif, 7 and 8 Kil.....	35 00 @ 40 00
French Kips, 1/2 lb.....	1 00 @ 1 30
California Kip, 1/2 doz.....	65 00 @ 80 00
French Sheep, all colors, 1/2 doz.....	15 00 @
Eastern Calf for Backs, 1/2 lb.....	1 15 @ 1 25
Sheep Roams for Topping, all colors, 1/2 doz.....	8 00 @ 13 00
Sheep Roams for Linings, 1/2 doz.....	5 50 @ 10 50
California Russet Sheep Linings.....	1 75 @ 5 50
Best Jodot Cal Foot Legs, 1/2 pair.....	5 25 @
Good French Cal. Boot Legs, 1/2 pair.....	4 50 @ 5 00
French Calf Boot Legs, 1/2 pair.....	4 00 @
Harness Leather, 1/2 lb.....	30 @ 37 1/2
Fair Bridle Leather, 1/2 doz.....	48 00 @ 72 00
Skirting Leather, 1/2 lb.....	34 @ 37 1/2
Welt Leather, 1/2 doz.....	30 00 @ 50 00

MATTESON & WILLIAMSON'S

AMERICAN CHIEF



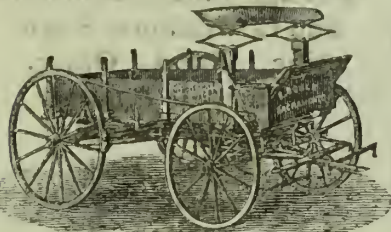
GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world. Send for circular to

14v2-3m

MATT. SON & WILLIAMSON, Stockton, Cal.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skin at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,
SACRAMENTO, CAL.

ap22-3m

JACKSON MICHIGAN WAGONS.



The large sale of the above WAGONS has induced a number of persons to try and sell other Eastern-made Wagons, none of which have any proof that they will stand in this dry climate. JACKSON WAGONS have the highest certificates from use for ten to fourteen years, consequently the buyer runs no risk in purchasing the Jackson Wagons. All sizes for sale low by

J. D. ARTHUR & SON, San Francisco.
N. B.—Warranted for three years. 21v2-3m

BAKER & HAMILTON,

Sacramento and San Francisco,

—IMPORTERS OF—

HARDWARE,

Farming Implements,

Machines, Etc., Etc.

Gang Plows,

Single Steel Plows,

Iron Plows,

Harrows,

Cultivators,

Seed Sowers,

Grain Drills,

Etc. Etc.

18v2-3m

Gang and Single Plows.

I am prepared to furnish my popular Gang and Single plows, of the lightest draft (best Plow to scour in sticky soil), and the most efficient Plow made. My leverage for raising the gang has no equal—a thirteen year old boy can work it with ease. I make any pattern of mould desired, to order. Twenty years experience in plow making enables me to demonstrate all I say, and every Plow is warranted to do all I recommend it to perform. Send your orders early, and for further information apply to

A. ELLISON, Patentee and Manager,
26v2-2m Marysville, Cal.

SAVE \$42! WHY PAY \$80?

THE
"HOME SHUTTLE" SEWING MACHINE,
Price \$38.

This machine being as good as the best, we have no hesitation in recommending it to our friends as a superior machine for family use. We take pleasure in its exhibition, and invite all to call and examine it before purchasing elsewhere.

It has a straight needle and makes a Lock Stitch. Send for a circular.
Agents wanted in every county. Each machine warranted for five years.

E. W. HAINES, Agent.

17 new Montgomery street, Under Grand Hotel,
16v2-3m San Francisco.

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,

Manufacturers of and Dealers in

Monuments, Headstones, Tombs,

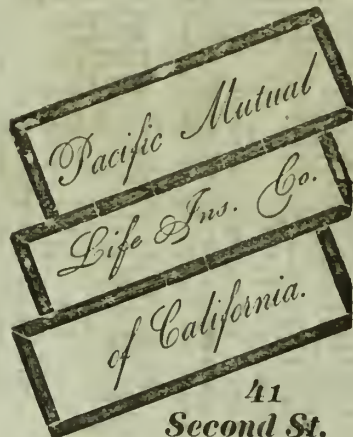
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421 Pine street, between Montgomery and
Kearny, San Francisco.
21v2-1y



Give it a Trial.

Will change gray hair to its youthful color with a few applications. Suits all shades of color and complexion. Will neither stain hands, scalp or clothing. No sediment, clear as crystal. No sulphur or other bad smell, but delightfully perfumed. As a hair dressing it has no equal. It makes the hair rich in appearance, glossy and curly; cures dandruff and all other irritations of the skin, and prevents the hair from falling out. Liberal discount allowed dealers. Address orders to J. F. FUGAZI, or H. C. Kirk & Co., Sacramento; Hug & Schmidt, Agents, 356 Commercial street; Heathfield, Bogel & Co., 206 Battery street, San Francisco. Sold by all Druggists. del18-3t



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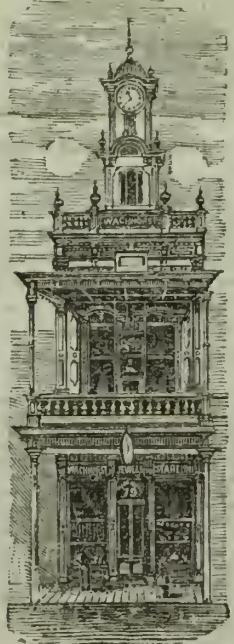
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WACHHORST'S TOWN CLOCK

—AND—

JEWELRY STORE.

WATCHES AND DIAMONDS,
At 79 J street, between Third and Fourth, Sacramento.



JEWELRY AND SILVERWARE,
At 79 J street, between Third and Fourth, Sacramento.

THE LARGEST AND FINEST STOCK OF GOODS
AT THE VERY LOWEST PRICES.

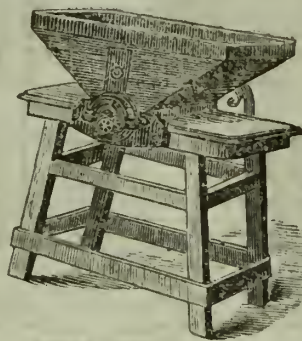
Every article of Jewelry bought in this establishment
WARRANTED strictly as represented.

Watches, Jewelry and Clocks Repaired
BY THE BEST WORKMEN.

All orders from the country promptly attended to.
7v2-3m

J. ROSS BROWNE,

Office, No. 45 Montgomery Block,
SAN FRANCISCO, CAL.

THE CELEBRATED
CHALLENGE FEED MILL.

For Farm use and Custom work. The only Practical Farm Feed Mill ever invented. Can be used with from one to eight-horse power, and grinds from 250 lbs. to one ton of barley per hour. Price of Mills from \$75 to \$300, according to size. Adapted to Wind, Water, Steam, or Horse Power. The grinding surface is adjustable, and can be replaced in fifteen minutes at an expense of one dollar to one dollar and a quarter. Over 3,000 now in use. Every Mill warranted to give satisfaction. For sale by all leading agricultural firms on the coast. For further particulars send for circular.

M. S. BOWDISH, General Agent,
With Hawley & Co., cor. California and Battery sts.,
13v2-6m San Francisco



A Desirable Hiss.—There is the hiss of ridicule, the hiss of scorn, the hiss of snakes in the grass; but the most delightful hiss is that of

Tarrant's Effervescent Seltzer Aperient

In the sparkling goblet, giving assurance to the invalid that his thirst will be deliciously assuaged; that his stomach will be refreshed and purified; that if he is feverish, his body will be cooled by healthful evaporation; that if he is constipated, the difficulty will pass away without a pang; and that if the condition of his general health is impaired, it will be speedily restored. Of course he will take care to procure none but the genuine.

SOLD BY ALL DRUGGISTS.

THE GREAT
RETAIL DRUG HOUSE
OF THE PACIFIC COAST!

JAMES G. STEELE & CO.,

Chemists and Apothecaries.

Import and sell directly from Eastern and European Markets.

NO. 521 MONTGOMERY STREET,
San Francisco.

Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

—AND—

GRINDELLA LOTION,

For the Cure of Poison Oak.

21v2-3m

DEALERS AND CONSUMERS

Are hereby notified that

THE STANDARD SOAP COMPANY

Continue to manufacture the following Standard Preparations:

Detergent, Prize Medal and Laundry Soaps;
Kane's Condensed Soaps;
Thomas' Cool Water Bleaching Soaps;
Standard and Eureka Washing Powders;
Madame Balcear's Washing Fluid and Liquid Bluing.

Adamantine Candles, and a general assortment of Family, Laundry, Fancy and Toilet Soaps.

Manufactory, 204 and 206 Sacramento street, San Francisco, 21v2-3m

R. IRELAND,

The old Pioneer Broom Factory—Established August, '66. No. 82 J street, between Third and Fourth, Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubba and Pails. 16v2-3m

DIFLES, SHOT-GUNS, REVOLVERS, Gun Material. Write for Price List, to GREAT WESTERN GUN WORKS, Pittsburgh, Pa. Army Guns, Revolvers, Etc., or traded for. Agents Wanted. 6v2-6m

FACTS LITTLE KNOWN RELATIVE
LIFE INSURANCE.

Losses Paid on the Pacific Coast under the Massachusetts Law by the NEW ENGLAND MUTUAL LIFE Insurance Company of Boston:
A. C. F. Miller, Portland, Oregon, Premium overdue six months at time of death, \$5,000.
J. W. Jones, Colusa, California, overdue four months at time of death, \$10,000.
J. B. Baldwin, Colusa, California, overdue three months at time of death, \$1,000.
G. L. Porter, Virginia City, Nevada, overdue ten days at time of death, \$2,500.
L. G. Peel, Walnut Creek, California, overdue eleven months at time of death, \$5,000.
J. H. Calden, Princeton, California, overdue four months at time of death, \$3,000.
J. Levison, Boise City, I. T., overdue two months at time of death, \$10,000.
C. W. Salter, Hor's Ranch, California, overdue two months at time of death, \$5,000.
C. O. Stevens, Danville, California, overdue one month at time of death, \$5,000.

THE MAIN POINTS OF THE LAW UNDER WHICH THE ABOVE CLAIMS WERE PAID.

No Insurance on Life shall be forfeited by non-payment of premium.

The net value of the Policy shall be ascertained at the time of the lapse of the premium, and be considered a net single premium of temporary insurance.

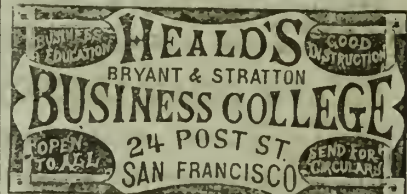
If the death of the party occurs within the term of temporary insurance, the Company shall be bound to pay the whole policy the same as if there had been no lapse of premium; provided, the Company shall have the right to deduct from the face of the Policy the amount of premium due, with interest, at the date of death.

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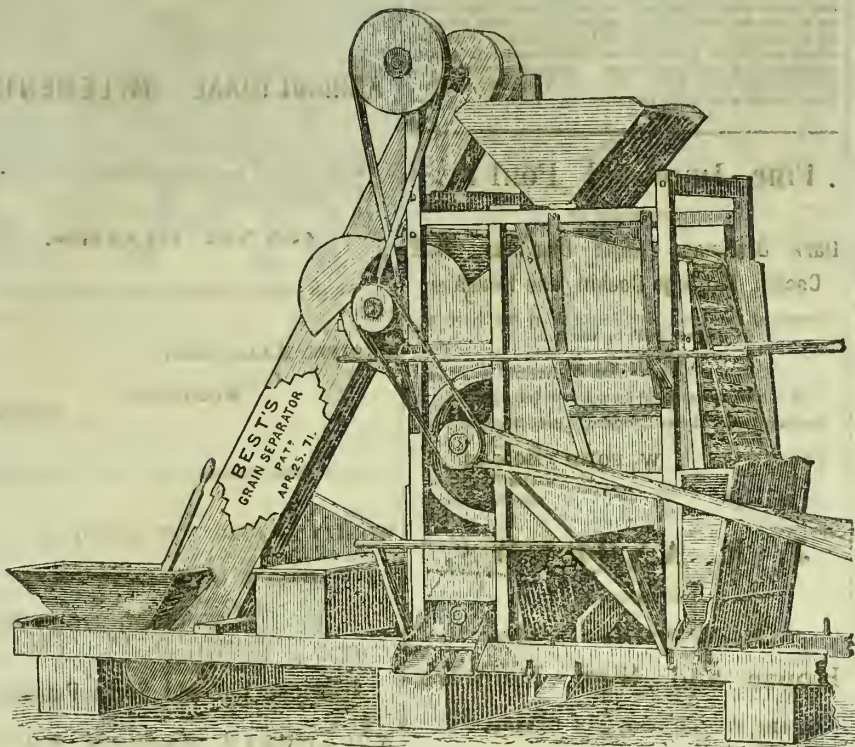
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SAN FRANCISCO.



Volume III.]

SAN FRANCISCO, SATURDAY, JANUARY 13, 1872.

[Number 2.]

White Leghorn Fowls.

Our cut is a portrait of a pair of White Leghorn fowls, owned by Mr. G. B. Bayley of Oakland, a gentleman who has had great success with the breed. This class of fowls is highly prized by breeders for their many good qualities. They are bred of nearly all colors, except black; the white, however, being preferred. This variety is similar to the Spanish in size and appearance, except in the plumage, which is white, with neck and saddle feathers slightly tinged with gold. They are very hardy birds, suffering from severe and sudden changes much less than the Spanish, with which many deem them closely allied. They are extremely good layers, and seldom desire to set; the eggs are large and white, resembling those of the Black Spanish variety.

Mr. Bayley's experience with the breed is that they mature more rapidly than any other fowl; at three months they are perfect epitomes of the old ones, and begin to lay at five months. In his opinion they are very well adapted to the wants of the farmers on this coast, owing to their hardiness, as they are not affected by the wet weather and cold winds which kill the Black Spanish. He has never had any difficulty with them on this score. The young are easy to rear; they feather up soon and when two months old are as sprightly as many chicks at four months of age. The hens are considered excellent winter layers, and will lay as large a number of eggs in a year as any fowls known, not excepting the Polands or Hamburgs. They are a medium-sized fowl of a quiet and docile disposition.

In some flocks occasional colored feathers will appear, but these fowls should at once be discarded if it is desired to breed the pure white bird. The legs and skin should be yellow. The cocks have large single combs which should stand perfectly erect; full wattles and large cream-colored or white ear-lobes, extending sometimes upon their face. The carriage of both cock and hen is proud and dignified. The hens have large combs usually, which frequently lap over like the Spanish. Mr. Bayley has sent a few lots to Australia and quite a number to Honolulu; they stood the sea voyage well. The fact of this breed being somewhat cheaper than other fancy fowls will assist in commending them to farmers who wish to keep them for profit. We will take occasion in some future issue to give an illustration of some of the other breeds of fowls raised by Mr. Bayley.

PECAN NUTS IN TEXAS.—The pecan trees in San Antonio county, Texas, were reported as breaking down with fruit. The crop in that immediate section, it was thought, would bring over one million of dollars; the nuts selling at \$2.50 per bushel. The crop in Louisiana is reported at 25 per cent. over that of last year.

Our Wool Product.

An important export of California is its annual wool clip, and whatever interests the buyers of our wools, is of equal interest to the producers.

McLennan, Wholan & Grisar's *Wool Circular* contains some very interesting matter to all connected with the wool trade on this coast. We learn from it that the receipts of California fleece for the year 1871 were 74,037 bales, or 22,187,188 lbs, and the total receipts from all quarters were 79,791 bales, or 22,473,649 lbs. The wool was generally of short staple, and in many instances tender. With the exception of the Southern clip, which contained much less burr than in former years, it did not come up to the standard of 1870, though some extra choice lots were received. The *Circular* says that owing to a combination of causes the spring clip of this year was

good as in former years; some lots being of tender staple and poor texture. Formerly, says the *Circular*, Oregon wool was characterized by freedom from burrs, seed and tags; it was lustrous and well adapted for combing purposes. Since then the nature of this wool has completely changed, and with the exception of a few privileged counties, where the breeding has been better attended to, it does not any longer yield any combing or delaines.

Comparison with Former Years.

The receipts of California wool for the four years last past has been as follows:—for 1868,—12,987,527 pounds; for 1869,—13,677,720 pounds; for 1870,—19,472,660 pounds; for 1871,—22,187,188 pounds. Receipts from Oregon for the same period have been:—421,460; 1,039,460; 1,403,970; 921,000.

Frauds.

The *Circular* complains of frauds com-

The Last Storm.

We have been visited, since our last issue, by another storm, which set in on Sunday night and continued with very little intermission for about thirty-six hours. A large amount of water fell during that time, and the rain was very general throughout the State, as far south as Visalia. We append the total of rainfall in several localities, the excess of which, over our last week's report, shows the amount received during this storm:

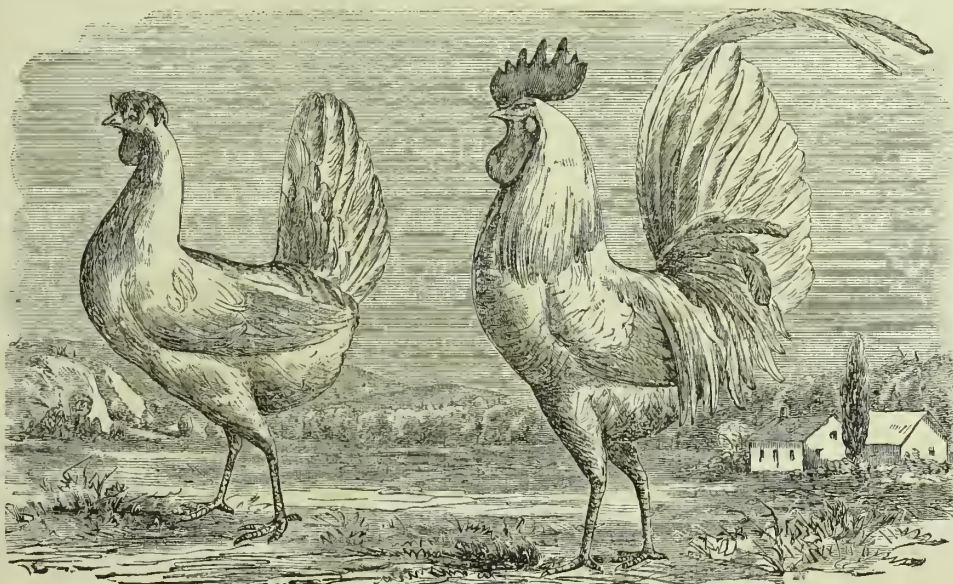
Napa, to December 29th.....	26.99
Vallejo, to January 8th.....	19.30
San Rafael, to " 9th.....	38.35
Stockton, to " 8th.....	15.17
Sacramento, to " 8th.....	14.33
San Francisco, to Jan. 9th.....	24.60
Shasta, to Jan. 5th.....	50.14
Oakland, to " 9th.....	23.18
Woodland, to " 9th.....	20.10
Petaluma, to " 9th.....	23.45
Visalia, to " 9th.....	6.15

The rainfall at San Rafael was 5.72 in. during the last storm. We have no report from Napa since Dec. 29, but judging from what has fallen there up to that time, that, as well as San Rafael, must be rather wet places at this time. The Butte Slough, the cutting of which we noticed last week is a very heavy work, being 80 feet wide at the base, 14 at the top and 25 feet high. A contract has been let to close the breach at seventy-five cents per yard. It is hoped that by the time it is repaired there will be a law upon the statute book, which will make the cutting of any such work a State prison offence instead of a mere misdemeanor, at present. The damage to the Sherman Island levee and the cause of the same is noticed in another column.

This storm in the mountains has also been unusually severe and attended with a very large amount of rainfall. Lake Tahoe has risen 22 inches notwithstanding its large outlet. The average depth of snow on the eastern Summit of the Sierras is said to be about seven feet, and about one foot on the western slope. Some considerable damage has been done to dams and ditches in the mountains; but not so much as might have been expected.

How Things Look in the Sacramento Valley.

One of our reporters having just returned from Sacramento reports as follows of the state of the weather:—"Things look rather damp around the capital city. Monday morning the rain came down, for a change, very briskly, and the river lifted itself accordingly. All along the Sacramento River, for miles after leaving Rio Vista, the country is literally in a bath; orchard trees stand two and three feet deep in water, and as far as the eye could reach, the fields were all submerged. The Vallejo Railroad track beyond Davisville lies under several feet of water at some places. During our visit a small steamboat was running daily between Davisville and Washington, carrying mails and passengers—thus forming a connecting link with the California Railroad, over the line of its submerged track. Commend us to the Californian for the means of getting over the country, despite floods and water-covered railroads. As long as steam can be made, and paddles made to obey, it can rain all winter, for all the Yoloites care. Sacramento City is, so far, well protected by the levee, but if the storm should commence again it will have only three feet to fill in before rolling over the levee,



WHITE LEGHORN FOWLS.

bought immediately on its arrival, and passed directly into the hands of consumers, represented in this market either by owners or agents of Eastern manufactures.

The Prices

Obtained were very high, the market having been considerably excited at the immediate opening of the season—an excitement which continued without intermission until its close, prices having steadily advanced from day to day.

The following facts will undeniably account for the great demand and rapid advance in the price of wools:

First—The great scarcity of medium wools in the Eastern market, as well in the hands of dealers as manufacturers; consequently, California being the first source of supply open to fill the requirement, the buyers were eager to avail themselves of it.

Second—The wool markets all over the world have considerably advanced the prices for that article, as a necessary consequence the price of manufactured woolen goods has likewise increased.

The total value of the receipts of 1871 is set down at \$6,605,132. The average price of spring wool is set down at 29c. per lb; fall wool at 25c.; Oregon wool at 40c. and Foreign wool at 45c. The latter amounted to only \$164,475 of the total amount of value.

The Receipts from Oregon, Etc.,

Are set down at 921,000 pounds and from foreign ports 365,461. The condition of Oregon shipments are reported not as

mitted by shippers, such as corral dirt hidden in the middle of the fleeces, sand thrown in between layers of wool and wet fleeces packed among dry ones.

A Suggestion.

The *Circular* appeals to the good sense of our farmers to add a few head of sheep to their general farming stock, as is done in Canada. These sheep will be a benefit to their farm in eating the grass which other stock do not consume, and giving the best manure in return. These small herds can be better cared for than large ones, they are more easily kept clean, and their wool will always command a higher price than others. Long-wooled sheep especially prosper well in small bands.

THE STATE LANDS.—Of late years it has been very difficult for the people generally to learn much about the lands belonging to the State—including the agricultural and swamp and overflowed lands. But we perceive by the proceedings of the Legislature last week that Mr. Days has introduced a resolution, which was promptly adopted, calling for a detailed statement from the Surveyor-General of the condition, location, etc., of these lands. The information will be very welcome and important to settlers and the public generally.

FOREST DESTRUCTION.—It is estimated that at the present rate of destruction that not one of the forest pines will remain in either Wisconsin or Michigan in 30 years from this time.

CORRESPONDENCE.

Notes of Travel in Alameda and Contra Costa Counties.—Continued.

[BY OUR OWN TRAVELER.]

Mills' Seminary.

The above-named institution, one of the finest on the Pacific Coast, is situated three miles east of Brooklyn, Alameda county, near the foothills. The building is 100x218 with a wing 100x136, cost \$100,000, and was completed August 1st, 1871. The laundry and skating rink adjoin the main structure and are complete in every department. The former is run by a small steam engine, which also furnishes steam for heating the main building. The rink is 40x70 feet and is the principal resort of the young ladies during their leisure moments. The entire institution is furnished in the most complete manner, and lit throughout with maxim gas manufactured on the premises.

The Principals and Teachers.

The Rev. D. C. T. Mills and his wife are well known to the public as experienced and highly successful educators. Their school at Benicia, from which they have brought to Mill's Seminary all the pupils who had not completed the course, with a few exceptions, was founded in the summer of 1852, and was the first young ladies school, we believe, in California. It passed from a Board of Trustees to Miss Mary Atkins and was by her transferred to Dr. and Mrs. Mills. There are 21 teachers in addition to the principals, who are among the most able instructors on the coast.

The Institution

Will accommodate from 180 to 190 pupils, and so numerous have been the applications for admission that numbers have been declined by its principals. Some 80 acres of land belonging to the seminary surround the same and are beautifully laid out with trees, flowers, and gravel walks. About 100 of the wealthiest citizens of San Francisco and a number in other parts of the State, whose names you have not space to give, have contributed their means to make this institution what it is. On a clear day the city of San Francisco and the towns that surround the Bay may be seen from the top of the building, making as beautiful a bird's-eye view as one would wish to see.

Safety Fuse Manufacture.

It may not be generally known that a factory of this kind exists in this State. There are now three such establishments. It may not be generally known that a manufactory of this kind exists in this State. Our correspondent, L. P. Mc, furnishes us with the following: There are three such establishments in the State, the principal one of which is situated two miles southeast of Alameda, and about twelve miles from San Francisco, and is known as the branch works of Toy, Bickford & Co., the original works being at Hartford, Connecticut, and were started thirty-five years ago. The works near Alameda are run by an engine of 35 horse power, and were started five years ago. The greater part of the fuse used on this Coast is now manufactured at this establishment, and their capacity is sufficient to supply the entire demand. Twelve men are regularly employed.

Dougherty's Station.

Or what is sometimes called Dublin, is on the edge of Livermore Valley, about 18 miles east of the county seat of Alameda, San Leandro, and contains nearly 150 inhabitants. It has two stores, the principal one of which is owned by S. Wertheimer, one blacksmith shop and two hotels; Green's Hotel is presided over by Wm. Tehan. J. W. Dougherty for whom the town was named, is one of the principal land owners of the section, possessing some of the finest land in the valley.

Contra Costa County.

This county derives its name from the central range of the coast mountains, which cover a large portion of its surface. It is about 40 miles in length from east to west and 20 or 25 miles wide. It has a very irregular boundary formed on the north

by San Pablo and Suisun bays and the San Joaquin river, and by the western channel of that river on the east; by Alameda county on the south and the Bay of San Francisco on the west. It has an area of over half a million acres, one-third of which is good arable land nearly all under a high state of cultivation. One-half of the county is hills and mountains including Mount Diablo, which contains the most important coal mines in the State. The balance is nearly all swamp and overflowed lands.

Danville and Limerick.

The former village is situated on the western edge of the county and about 35 miles from your city, and contains some 300 inhabitants. There are a number of stores, several blacksmith, wagon, saddle and harness makers' shops, etc., and one good country hotel kept by H. W. Harris. Three miles south of Danville is a small town existing under the euphonious title of Limerick, containing about 100 inhabitants but without a postoffice, the mails being obtained from Danville. Small as it is there are two hotels in the place, the principal one of which is kept by P. Luiten. C. S. Mills & Co. are its most prominent merchants, and do a stirring business for the size of the town. Surrounding the village are some of the most thrifty farms in the county.

L. P. MC.

Healdsburg Correspondence.

Why Fruit Don't Pay.

EDITORS PRESS:—I noticed in a late number of your excellent journal the following: "Farmers write for your paper." As it rains to-day, I have leisure for the same, although it seems to me that every subject has been talked up, reported upon or ably handled by the press. Some time since I saw an article on the subject of saving the fruits of the orchard. The writer seemed to convey the idea that there was too much waste of fruit, and consequently, what did arrive in the market was so high in price that the poor classes must go without, not being able to pay the prices charged; but the writer did not tell us who was to blame for the high prices.

Now it seems to me it certainly is not the producers fault, and I will just give you a copy of a small bill of return sales, just to show the matter up.

ACCOUNT OF SALES

Oct. 14th, 1 box apples.....	\$ 1.00
Oct. 18th, 12 boxes apples at 75 cents....	\$ 9.00
Oct. 19th, 3 boxes apples at 65 cents....	\$ 1.95
Oct. 20th, 20 boxes apples at 75 cents....	\$15.00

\$26.95

CONTRA.

Freight and drayage.....	\$ 8.00
Commissions.....	\$ 2.15—\$10.15

Net proceeds.....\$16.80

This return sale is from one of the commission houses in San Francisco; I suppose it to be as correct and honest as any, and I suppose as well as could be done at that time.

My apples were the best of Bellflowers, and Rhode Island Greenings. As the producer, I got for 45 boxes of good apples \$16.80, and that is about the average of sales for the season, and my neighbors realize about the same. As producers we do not feel that we can supply the market with good fruit any cheaper. The commission merchant visits us, and tells us how to prepare the fruit for market, and we do as we are bid, the largest and best to show first on opening the box, which I can hardly realize as right.

Our orchards must be pruned and cultivated, the fruit gathered, boxes bought and the fruit hauled to the depot all in good order. We send off our best fruit on consignment, and do the best we can with what is left, drying and disposing of it in various ways, the pigs of course have to put up with the refuse. Now the fact is the fruit has to pass through too many hands before the consumer gets hold of it. The railroads and steamers must have their high charges, drayage and wharfage must be paid, the commission merchant takes his per cent, and the huckster must have a living, so by the time the apple is ready to be eaten it must taste pretty strong of the hands it has gone through since it left the orchard.

Now I am of opinion there is more fruit goes to waste after it leaves the orchard, than before. I often see notices of fruit being dumped into the bay; I suppose there is an over-supply for the market at the price it is held at, and so it is kept

on hand, gets old or rots and is lost to the producer. As we pay the expense of getting it to market, why is it not given to the poor in behalf of the producer, and give him the credit of it, and that before it is entirely spoiled. I think there should be a call and a meeting of fruit growers, to agree upon making an average appearance of the fruit, on the opening of the box or basket, and then the consumer would know just what he was getting, and it would be far less trouble to the packer. We should also insist upon quicker sales and more of them, and that every transaction should be plain and on the square.

I chanced the other day to hear the remark that "the business men of California are all swindlers." The thought struck me, is it so? the answer in my own mind is, no; but then the query came, who does the gentleman call, the business men of California? He seems to have nothing to do but smoke his pipe and look around; he may be a good judge, but I doubt it. Now I am not willing to allow that the producers, the workers of the soil are all dishonest; and yet they compose the larger number of the business men of this State; so, brother fruit-raisers, let us be honest in packing our fruit, so that we shall not come under the head of swindlers; and let us have honest commission merchants that will sell our fruit on fair commissions, even at low rates if needs be, but not dump it into the bay to keep up prices. I would like to have a good chat with you on this subject.

A. C.

Our correspondent is evidently clear-headed, on the subject he writes upon.—[Ed.]

Railroad Items.

The surveying and locating of the Walla Walla and Columbia River Railroad has been completed. A considerable amount of the grading will be done this winter. It is expected that the road will be in running order within a year.

The surveying party under Capt. Maxwell has been ordered to Pend Oreille Lake, to make surveys during the winter.

Gen. Sprague, T. B. Morris and E. S. Smith have gone to Puget Sound, and the Kalama Beacon says their visit is supposed to be connected with the location of the terminus, between Olympia and Steilacoom.

The track is laid and construction trains are running on the line nearly eighteen miles, extending five miles and a half beyond Kidder's Camp, up the Cowlitz. A side track has been put down opposite Freepoint. The material for the Tontle river bridge is being transported up the Cowlitz by steamer; and as every part of the bridge is ready to be put together, its completion is but the work of a few days.

The Oregon and California Railroad has been graded to a point 60 miles above Eugene City, in the Umpqua Valley. The track is laid but 14 miles above Eugene, and cannot be extended further until a new supply of iron arrives.

The Burgess party, who have been surveying a route for the Northern Pacific Railroad through the Pipestone Pass, state that this route will be some 50 miles shorter than that by the Deer Lodge Pass.

A suit is in progress at Omaha between the Union Pacific Company and T. C. Durant, to compel the latter to deliver to the railroad company about one million dollars' worth of property deeded to him by individuals in trust for the railroad company in 1863 and 1864.

Work on the western division of the Colorado Central is progressing rapidly. The road-bed is graded ready for the iron to station 275, at Huntsman's Ranch, and it is in a forward state of completion to station 375. The large force now employed between station 335 and Elk Meadow, at Elk creek, brings the working parties within four and a half miles of the Forks, where they will commence operations on or about the first of February.

The work of pushing the Atlantic and Pacific Railroad westward is progressing at a rate hardly surpassed by the operations which characterized the building of the Union Pacific, a few years ago. Already the line is completed to Vinita, 35 miles west of the Missouri line.

The final survey has been made on the Iowa Pacific Railroad, and the route is better in all respects than that surveyed before. The work will probably be completed on the road in Ida county this year, and east of Fort Dodge it is progressing so rapidly that the whole line from Wells to Fort Dodge will be graded by spring.

At a recent special election, Gonzales county, Texas, voted to take \$200,000, and Caldwell county, \$159,000, in bonds of the Western Texas and Pacific Railroad.

Ice Cured Pork.

The Cincinnati *Price Current*, under the heading of "Provision Trade Revolution," gives some interesting information concerning the growth of a new industry—the ice-curing of pork in the summer time—which it says is making "great breaches" in the old packing trade. According to this trade journal it may almost be said that it is no longer necessary to pack and lay aside meat in winter at all, any more than at any other season; there being, however, a few weeks in the heated term of summer when it is not desirable nor necessary to handle or use much meat. Swine are fattened more conveniently and more economically in fall weather, and then transportation can be done twenty per cent. cheaper. Fresh ice-cured meat is brighter, sweeter and sells higher for several of the leading qualities than the dry, highly salted winter-cured. Ice houses have been constructed at many western points where packing continues constantly and safely all summer. The extra cost of cold air from ice is being rapidly reduced, and is already counting less than the expense of holding meat over from winter to summer. This state of affairs has completely upset the old business by which the wealth of the pork packing business has been acquired. And the article concludes with the remark that the "last winter's packing has lately been selling at a loss of some forty per cent."

SCRIBNER'S MONTHLY.—The January number is a rare publication, and its numerous engravings are finely executed. The publishers apparently aim to raise the reputation of American magazines for beautiful wood engravings, in which effort they are eminently successful. Printed on superior paper with artful impressions, pleasing and attractive delineations form pictures indelible in the memories of the most cultivated readers. Scribner's views of the Yellowstone, in volume second, and Yosemite in the present number we have never seen excelled. No one will be disappointed who reads this new and first class monthly. We append a summary of the table of contents for January:

The Orphan's Christmas-Tree—Poem—Illustrated; The Wonders of the West—No. 1; The Big Trees and the Yosemite—Illustrated; Song—Poem; A Christmas Carol—Poem—Illustrated; Stephen Skarridge's Christmas—Illustrated; A Christmas Symphony—Poem—Illustrated; The Last Man of Mexican Camp; The two Mrs. Scudamores—Concluded; Christmas—Poem; Hunting Adventures in India—Illustrated; The Oak Tree's Christmas Gift; The Great Sea-Serpent; A Day of Scottish Games; Some Kinds of Spiritual Quackery; Wilfrid Cumbermede; Assault of Autinous upon Ulysses; At His Gates—Chapters I.-III—Illustrated; Topics of the Time; The Old Cabinet; Home and Society; Culture and Progress Abroad; Culture and Progress at Home; Etchings—Christmas in Ole Virginia.

Published by Chas. Scribner, 654 Broadway, \$4 per annum. Bound volumes from its commencement, July 1, 1870, can be obtained, and will be highly prized by those who desire an excellent magazine.

CLARIFYING LIQUIDS.—In many industries, the clarification of liquids, or, in other words, the removal of opaque impurities which make turbid the same, is of prime importance. To secure this, recourse is had to the troublesome and costly process of filtration, and to the quite different method of adding, after heating the liquid, some substance like blood, containing albumen, which coagulating by the heat, mechanically gathers the impurities and sinks with them to the bottom. To these may be added the plan used only on a small scale in clearing coffee for drinking, of suddenly dashing cold water into the hot liquid, which sinking, induces currents that carry the extraneous matter downward to the bottom of the vessel. It is a matter of passing interest and curiosity to note the projected application of this simple plan to an industry no less important than that of salt manufacture, in which it is proposed to employ it for the purification of brine. The brine is first heated, and cold water is suddenly showered upon it, which it is claimed, effectually deposits or precipitates the impurities.—*American Artisan*.

THE TUBE ROSE.—This is one of the most fragrant blossoming plants of all the species of Bulb or Tuberous plants grown, its perfume is equal to the Orange flower, or Daphne Odora, and the perfume remains with the flower as long as its life lasts; it is the true type of Love and Devotion.

MECHANICAL PROGRESS.

The Durability of Timber.

A late edition of *Tredgold* on carpentry furnishes the following interesting and useful facts with regard to the durability of different kinds of timber:

In regard to the durability of different woods, the most odoriferous kinds are generally considered to be the most durable; also woods of a close and compact texture are generally more durable than those that are open and porous, but there are exceptions, as the wood of the evergreen oak is more compact than that of the common oak, but not nearly so durable.

Sir H. Davy has observed that, "in general, the quantity of charcoal afforded by woods offers a tolerable accurate indication of their durability; those most abundant in charcoal and earthy matter are the most permanent; and those that contain the largest proportion of gaseous elements are the most destructible." "Amongst our own trees," he adds, "the chestnut and the oak are pre-eminent as to durability, and the chestnut affords rather more carbonaceous matter than the oak. But we know from experience, that red or yellow fir is as durable as the oak in most situations, though it produces less charcoal by the ordinary process. The following table of the quantity of charcoal afforded by 100 parts of different woods is added, for the information of the reader:

Oak, dry.....	22.6	Pine.....	20.0
Chestnut.....	23.2	Scotch Pine.....	16.4
Mahogany.....	25.4	Ash.....	17.9
Walnut.....	20.6	Norway Pine.....	19.2
Elm.....	19.5	Sallow.....	18.4
Beech.....	19.9	Birch.....	17.4
Fir.....	15.6	Sycamore.....	19.7

But it does not appear that the proportion of charcoal is a satisfactory criterion of the durability.

An experiment to determine the comparative durability of different woods is related in Young's "Annals of Agriculture," which will be more satisfactory than any speculative opinion; and it is much to be regretted that such experiments have not been oftener made.

"Inch and half planks of trees from thirty to forty-five years' growth, after ten years' standing in the weather, were examined and found to be in the following state and condition:

Cedar, perfectly sound; larch, the heart sound, but sap quite decayed; spruce fir, sound; silver fir, in decay; Scotch fir, much decayed; pinaster, quite rotten; chestnut, perfectly sound; abele, sound; walnut, in decay; sycamore, much decayed; beech, sound; birch, quite rotten.

This shows at once the kinds that are best adapted to resist the weather; but even in the same kind of wood there is much difference in the durability, and the observation is as old as Pliny, that "the timber of those trees which grow in moist and shady places is not so good as that which comes from a more exposed situation, nor is it so close, substantial, and durable;" and Vitruvius has made similar observations.

Also split timber is more durable than sawed timber, for the fissure in splitting follows the grain, and leaves it whole, whereas the saw divides the fibers and moisture finds more ready access to the internal parts of the wood. Split timber is also stronger than sawed timber because the fibers, being continuous, resist by means of their longitudinal strength; but when divided by the saw, the resistance often depends on the lateral cohesion of the fibers, which is in some woods only one twentieth of the direct cohesion of the same fibers. For the same reason whole trees are stronger than specimens, unless the specimens be selected of a straight grain, but the difference in large scantling is so small as not to be deserving of notice in practice.

Of the durability of timber in a wet state, the piles of the bridge, built by the Emperor Trajan across the Danube, are an example. One of these piles was taken up, and found to be petrified to the depth of three fourths of an inch; but the rest of the wood was little different from its ordinary state, though it had been driven more than sixteen centuries.

The piles under the piers of old London Bridge had been driven about 600 years, and, from Mr. Dance's observations in 1746, it did not appear that they were materially decayed; indeed they were found to the last to be sufficiently sound to support the massy superstructure. They were chiefly of elm.

Also, in digging away the foundation of old Savoy Palace, London, built nearly 700 years ago, the whole of the piles, con-

sisting of oak, elm, beech, and chestnut, were found in a state of perfect soundness; as also was the planking which covered the pile heads.

On opening one of the tombs at Thebes, M. Belzoni discovered two statues of wood, in good preservation; the only decayed parts being the sockets to receive the eyes. The wood of these statues is probably the oldest in existence that bears the traces of human labor.

Mechanical Progress in the United States.

There is nothing which brings the material progress of the United States into more prominent light than a retrospective view of the condition of affairs forty years ago, in regard to the capacities of our mechanics to produce machinery. In 1828, the first locomotive was imported from England, to draw the coal-cars on the Carbondale and Honesdale Railroad, Pa.; the second in 1830, to run passenger-cars on the Mohawk and Hudson Railroad. The first American locomotive was built in 1830, in the United States Foundry, at West Point, for the South Carolina Railroad, and the third in 1831, for the Mohawk and Hudson Railroad, which road was soon abandoned and broken up for want of patronage.

In the same year Baldwin, of Philadelphia, made a miniature locomotive, which could draw two little cars with four persons; he exhibited it in Peale's Museum, in Philadelphia, and this exhibition laid the foundation for his fortune, and the large machine shop in that city, still bearing his name. In the following year, he received an order from the Germantown Railroad Company to build a large locomotive. It would have frightened any other man of less pluck, as in the whole city there were only five men who were able to help him, and no proper tools at all. He therefore commenced at once to make tools and patterns, and, incredible as it seems, in six months the locomotive was ready. It appears to have been a very delicate affair, as the advertisements in the Philadelphia papers of that day prove. They say, "Passengers to Germantown will go with a train of cars drawn by the new engine, when the weather is fair; when it rains, the horses will draw the cars."

Notwithstanding this, Baldwin's reputation was settled; before the end of 1834, he had finished five locomotives. He was then able to finish two small ones in a year; now the same shop finishes one of large size, with tender, etc., every day. The first small locomotives could run with a velocity of ten miles an hour, and draw one or two tons; the present locomotives have a speed of 40 miles per hour, and draw 1,000 tons.

A business commenced in 1831, with five men, without proper tools, in a small shop, (which still stands,) has increased in 1871 to a large manufactory grown around it, occupying a quarter of a million square feet, employing 2,000 men, and manufacturing four millions dollars worth of locomotives per year, which are sent to California, Canada, South America, Europe, etc., in spite of European competition, of cheap labor, and cheap material.—*Manufacturer and Builder.*

Experiments with Lubricators.

A very elaborate series of experiments were recently made in New York to test the relative value of different lubricators. The experiments were continued during a period of fourteen months. The following were the general results and inferences: The consumption of oil varies with its temperature when applied.

Winter sperm oil, sustained the heaviest pressure, and was taken as the initial of comparison for all others, and their per cent. of lubricating value determined by it. The tests of mineral oils and mixtures of animal and fish oils with them would not sustain an equal pressure with the sperm, when equal quantities of the oil were applied, without rapidly increasing the temperature of the journals, and producing an abrasion of their surfaces.

When the pressure on the bearings was made equal with winter sperm, it required from 100 to 400 per cent. increase of oil, to keep the temperature of the journals below 100° Fahr.

Experiments were made at varied velocities, with the same oils. The results proved that as the velocity was reduced the pressure could be increased, and the relative consumption of oil, applied at equal temperatures, was decreased in almost equal ratio.

SCIENTIFIC PROGRESS.

Meteorites—Their Orbits, Etc.

Much attention has of late years been given to that erratic class of heavenly bodies known as meteors, or, as they are sometimes called, *shooting stars*. In rare instances these bodies reach the earth, and when they do, they are usually called aerolites, or meteoric stones, from the character of their composition. Those which reach the earth are not supposed to be in any way different from those which merely blaze out for an instant, or shoot across a portion of the heavens, leaving a bright train of light behind.

When they fall to the earth, their direction is such as to lead to an unavoidable collision; those which become visible, for a moment only, and do not fall, enter into and pass through the upper and more rarified portions of the atmosphere. If their direction is such that they enter deeply into the atmosphere, but not pointed directly to the earth's surface, their motion is so much retarded by the friction of the air, that their direction is sufficiently changed by gravitation to bring them to the earth, and thus end their existence as separate and distinct bodies in space.

Meteors are of all sizes, from those of a few grains in weight to those of many pounds or even tons. The former, on entering deeply into the atmosphere, are rapidly dissipated by the great heat which is created by their friction, and the consuming effect of the oxygen with which they come in contact. The larger ones are usually fractured by the great heat produced upon their surface, and fall in fragments to the earth. Their fracture is usually attended by concussion, which often sounds like the report of distant cannon. The continued, subdued roaring which is often heard during their flight across the heavens in their approach to the earth, is produced by the rushing past them, laterally, of the air, which falls rapidly in behind them, to fill the partial vacuum caused by their motion.

It has been calculated that not less than an average of seven millions of meteors might be seen from all parts of the earth, every twenty-four hours, provided the earth should move during that time through a clear sky, without any light from the sun or moon. If all the meteors which so pass the earth within the time specified could be brought into the field of a telescope, it is calculated, on reliable authority, that the number would reach fully four hundred millions!

All these bodies move around the sun, and late observations have established the fact that many, if not most of them, move in approximately concentrated orbits, like the asteroids; but unlike the asteroids, in extremely elliptical orbits, like comets. The path of the "November meteors" has its aphelion just beyond the orbit of Uranus, and its perihelion at or near the earth's orbit, and inclined about 17 degrees to that of the earth.

Careful observations have led to the supposition that there are at least fifty different rings of meteors, such as the November ring, of which, however, that is by far the most extensive. Chemical analysis has revealed the presence of at least twenty-three different elements in these meteors, out of the whole number of sixty five thus far discovered as composing the earth's substance. The names of these elements are as follows: Oxygen, hydrogen, nitrogen, sulphur, phosphorus, carbon, silicon, nickel, chromium, tin, aluminum, magnesium, calcium, potassium, sodium, cobalt, manganese, iron, copper, titanium, lead, lithium and strontium. The presence of these elements, found also in the earth, suggests a common origin.

The asteroids probably compose a "ring" very similar to the November meteors; but its great distance from the earth will not admit of any except its larger component parts being seen, even by the telescope. No doubt a closer view would reveal an almost illimitable number, even down to bodies not greater than the larger asteroids. These bodies are supposed to be either the fragments of an exploded planet, or a planetary body thrown off from the sun in the form of a ring, and aggregated into a great number of small bodies, instead of into one large body, like the earth and other planets.

From the eccentricity of the orbits of the

meteorites, we might perhaps suppose them to be fragmentary portions of a cometary body, widely scattered in space, instead of being concentrated into a single body, as are the bodies known as comets.

The spectrum, that wonderful instrument of comparatively recent discovery, which is just beginning to be employed in the observation of comets, appears to indicate that these erratic bodies are composed of gases at a very elevated temperature. A careful microscopic study of many of the asteroids which have fallen to the earth, shows most conclusively that these bodies have at some time been in a state of vapor—as the comets now are—and that proximately they are made up of small rounded globules, which have accumulated and been more or less fractured by mutual impact, and finally consolidated. These supposed facts would seem to indicate a common origin for comets and meteors.

ACTION OF SULPHUROUS ACID ON PHOSPHATES.—B. W. Gerland has been making some important experiments on the action of aqueous sulphurous acid upon phosphates, which have developed some points of great practical importance, especially in their bearing on the manufacture of artificial composts and soluble phosphates. He finds that aqueous sulphurous acid does not, like the strong acids, wholly decompose the phosphates, but transforms them into soluble modifications. The ordinary bone phosphate, called tribasic, is easily soluble in sulphurous acid, and if the solution be hastily boiled and evaporated in open vessels, a crystalline double salt, a mixture of tribasic phosphate with a sulphate of lime, will separate. This new and remarkable body is said to be quite permanent, and in reference to its use as a disinfectant, and upon farm land it is certainly deserving of special notice. If we can by means of sulphurous acid decompose the phosphates, we shall avoid the expense of sulphuric acid, which must first be made from sulphurous acid, and obtain a product not so difficult to handle, and capable of a greater variety of uses than the superphosphates made in the old way. Mr. G. has studied the behavior of sulphurous acid towards other phosphates, the results of which, however, being purely theoretical we omit them.

BROMIDE OF POTASSIUM.—The increasing use of bromide of potassium, another of chemistry's contributions, would have been impossible, were it not for the extraordinary discovery of an apparently evaporated sea water bed in Germany. The amount of bromide consumed in medicine is now enormous, and most of it is derived from this source. The same mines have also completely changed our sources of potash; they produce far more than all the other sources of England and France put together, and have so reduced the price that carbonate of potash is now largely made in England at a price which competes most favorably with American pearlash, and will ultimately drive it out of that market. Bromide of potassium is an instance of a substance long used in medicine before its valuable properties were discovered.

INHALATION OF DUST BY WORKMEN.—The injurious effect of exposure to the dust of various manufacturing establishments has not unfrequently been dwelt upon with more or less force; but we are hardly prepared for the result of certain specific investigations on this subject. It has long been a disputed point whether the particles of iron, silica, etc., merely lodge within the air-cells of the lungs, or penetrate through their walls into the tissue between them. But Professor Zenker informs us that, on examining the lungs of a woman who had been exposed to the dust of iron oxide, used in preparing books of gold-leaf, he found the powder in the tissue between the air-cells and in their walls, as well as in their cavities. From less than two ounces of this lung over twelve grains of iron oxide were obtained by chemical methods; so that, if equally distributed through both lungs, there must have been at least three-quarters of an ounce inhaled. In another case—that of a workman exposed to the dust of a mixture used in preparing ultramarine substances—he found a quantity estimated at fully an ounce.—*Harper's Magazine.*

M. DEVERGIE, a French chemist, finds that water containing only one four thousandth of its weight of carbolic acid sufficed for the disinfection of the Morgue in Paris during the hottest weather, when it contained six or seven bodies.

HORTICULTURAL.

Sea Kale—(Crumba Maritima.)

[Written for the Press, by E. J. HOOPER.]

This vegetable was formerly much more used, I think, in England and Europe than it is at the present time, better, more highly flavored and finer vegetables, especially asparagus which it somewhat resembles, having now taken its place in a great measure. My own liking for it, is derived from eating it served up on buttered and toasted bread when a boy. At that age we probably relish every edible more than we do at a later age. But, at any rate, I believe it is a pleasant and delicate culinary vegetable. In England and France, and in similar latitudes it has to be raised under glass in a hot bed with plenty of manure to protect it from frosts and to have it ready for the table early in the spring. In California it would only need protection with some kind of substance, such as leaves and long stable manure.

Were Found Wild.

Sea Kale is found wild upon seashores in many parts of England, where the inhabitants gather it in the spring to eat, as the Americans do the sprouts of several young plants, preferring it to any of the cabbage tribe, as it generally grows upon the gravelly shore, where the tide flows over it, and the searchers observe where the gravel is thrust up by the roots of the plant; they open the soil, and cut the shoots before they come out, and exposed to the open air, whereby the shoots appear as if they were blanched; and when they are cut so young they are very tender and sweet, but if they are allowed to grow till they are green, they become tough and bitter. The gatherers of it call it sea cabbage. This wild sort is perhaps an annual. The cultivated garden species is a perennial, with some other varieties, as *Crumba Suecica* and *Crumba Orientalis*.

How Propagated.

This plant (*crumba maritima*) may be propagated in a garden by sowing the seed soon after it is ripe in a sandy or gravelly soil, where it will thrive very well, and increase greatly in its creeping roots, which will soon overspread a large space of ground, if encouraged; but the heads will not be fit to eat until the plants grow; should about November be covered over with sand or gravel about 4 or 5 inches thick which will allow a proper depth for the shoots to be cut before they appear above ground; and if this is repeated every autumn, in the same manner as is practiced in earthing asparagus beds, the plants will require no other culture in this climate, except, as I before observed, throwing some kind of litter over them when sprouts appear.

The French call this vegetable *le chou marin*. There can be no difficulty in its cultivation in California.

How Cultivated in South Carolina.

In South Carolina, the climate of which state is not much unlike California, this plant is now being cultivated in a few places. It is managed there as follows, and as the mode adopted is minutely described, I will here give an account of it:

Sea Kale flourishes best in a sandy soil, well enriched and decomposed vegetable manure, and a top dressing of salt as for asparagus. Sow the seed in February, watering the bed freely if the weather be dry. Thin out the plants gradually to 2 or 3 inches apart, keeping the bed free from weeds by frequent hoeing. In November cover the crowns of the plants with a few inches of earth. In the spring, prepare beds as for asparagus, and remove your plants in a similar manner, setting them about two feet apart, 2 or 3 inches deep. Water occasionally, if the season be dry, and hoe frequently; allow no plants to go to seed. Early in November give the beds two inches of well-rotted manure, forking it over lightly at the same time. Now cover the crowns of the plants with 3 or 4 inches of light soil, or with pure sand if you can readily procure it. The bed being thus finished, cover the crowns of the plants with large pots or boxes, sinking them one or two inches in the

ground, and carefully stopping any holes in them. Then procure a quantity of leaves from the woods, mix with the same quantity of warm stable manure, and cover the ground and boxes to the depth of 20 inches. In severe weather throw over this some dry litter or boards. The materials will come to a heat in two or three weeks, and in three or four weeks more it will be time to examine a pot or two, and when the plants are found to have sprouts from six to eight inches long, they may be cut for use. Remove a portion of the earth and cut close to the crown, and then replace the box or pot, and the other materials, and other shoots will soon appear. The plants will continue in a vigorous state of growth for two months, giving you a supply for the table nearly the whole winter; and having your bed once formed, the forcing process just described may be repeated every year for 14 or 15 years. In the spring remove the covering gradually, digging in a few inches of the decayed material to strengthen the plants for a future crop.

Protection from Frost.

To have Sea Kale without freezing, cover the plants early in the spring with eight or ten inches of sand, or fine, light earth. They will produce strong shoots, which, on clearing the ground around them, will be found to be of a clear, white color; or they may be blanched by covering them deeply with oat or wheat straw. They are useless unless well blanched. The shoots are cooked in the same way as asparagus.

San Francisco, Jan. 7th, 1862.

The Best Varieties of Grapes.

At the meeting of the Grape Growers' Association, held at Napa, on the 16th ult., a paper was read by Dr. Lockwood, from the Committee on vines, on the best varieties for vineyard planting. The varieties recommended by the Committee were pure black grapes, Zeufidel and Black Malvoise; pure white grapes, the Golden Arapelas and Boyer; pure musk grapes, the Rhenish Muscat. These were commended for their productiveness, although Rieslings would be entitled to the first place, if their good bearing qualities were satisfactorily established.

In response to an inquiry, Mr. Baufeton stated his Grey Rieslings averaged 15 pounds to the vine.

Dr. Crane has found that Rieslings were abundant bearers when trained high. Without high training they were shy bearers. The weight of fruit on a single vine—an exception, of course—thus trained, has by careful estimate been placed at 70 pounds. Not only is the Riesling a good bearer, but the superior quality of its product gives it special value. He had found, in the East, no difficulty in selling Riesling wine, when that from Mission grapes was neglected.

Mr. Krug would confine his selection to a very limited variety, naming as his favorites the Rieslings (Schaumberg and Frankling), the Zenfridel and Muscatel. He was aware that these would not suit all localities. Thus Rieslings did not prosper in Sonoma. Mr. Craig confirmed Mr. K's statement of the unsuitableness of Rieslings to Sonoma. His Riesling vines, trained on stakes, suffered from wind-blast and yielded badly. Col. Walton had no success with his Rieslings while he pursued the practice of low training and short spurs. He now reserves three canes to be tied together at the upper extremities. The increase over his former treatment is 600 per cent. He trains some other varieties (Chepelas, Muscats, etc.) in the same way.

Mr. Harazthy deprecated the especial attention paid to varieties without any consideration of the different qualities of soil. Planting should be done with reference to the adaptation of soils, to produce the qualities of wine desired. At Stockton, wines partook of the character of Port and Madeira. At St. Helena, Claret was indicated by depth of color.

A Trespass Law Wanted.

The following resolution was adopted by the Convention:

Resolved, That this Association earnestly recommend the immediate attention of the Legislature to the Trespass law, already memorialized for, and that the Association invite their special attention to the remedy necessary to carry into effect the proposed law; that the remedy by action in the courts of justice of this State is not satisfactory, and that a system of pounds, and the impounding of estrays should be established in each county, dividing the same into districts.

FARM HINTS.

Sacramento Farmers' Club.

This club met on Saturday last, at 2 P.M. A good number of farmers were in attendance. The subject for consideration was the planting of trees, and the varieties best for growing hard timber for manufacturing purposes.

E. F. Aiken opened the subject. The black locust and California black walnut he thought among the best hard wood trees for artificial cultivation—both rapid growers, the timber useful for manufactures, and the latter well adapted to growing on overflowed lands. To start locust seed he pours boiling water on them and allows them to stand in the water to cool off, and in twenty-four hours a large portion of the seeds will be swollen and rise to the top. These are removed and planted and the balance treated in the same manner. He imports many varieties of forest trees from the East by mail. Those of one summer's growth cost there \$8 per thousand.

Wm. M. Haynie thought that in transplanting trees the tap root ought not to be cut off. In case of fruit trees, cutting off the tap root insures a better spreading of the side roots, but it rendered shade trees more liable to be blown over. If practical, shade and forest trees had better be planted where the trees were to remain.

R. Williamson viewed the subject as one of great importance. Every interest in the State was more or less affected by trees. Trees affect the climate favorably, are conducive to public health and a full pocket. We want trees for timber and wood, which are becoming scarce. We want forests and belts of trees on the plains, and everywhere to protect growing crops from the effects of the winds. He had noticed this want especially on Sherman Island. He would name as good kinds to grow for timber the black walnut, black and honey locust, the black and white mulberry, and the blue gum or eucalyptus, a native of Australia. Thinks the latter one of the best trees for cultivation in the State. It does well on dry land or on moist land, but is a hard tree to transplant; should be grown in pots from seed, or be planted where it can remain. This tree should not be stripped of the side branches. If trimmed in this way it will grow crooked and lop over. The eucalyptus is an overgreen.

J. S. Harbison said the locust should be pruned but little. Many locust trees in the city had been killed by too much pruning, and their dying attributed to too much moisture. If allowed to grow naturally they would grow much more symmetrically and thriftily. The Eastern black walnut did well here, though not so rapid a grower as the California walnut. Thinks timber will be equally as good here as in the East. The wild cherry or timber cherry did well here; it requires a moist soil; has them growing rapidly. The Lombardy poplar is a very rapid grower and valuable for belts and wind-breaks. Trees do not do well generally in alkali soil. The Eastern mulberry does well here, is a rapid grower, and the timber is very valuable. The fruit is good for eating or cooking purposes; not so rapid a grower as the white and moretti varieties grown in California for feeding worms.

E. F. Aiken thought there was an exception as to alkali soil. The silver-leaved poplar did well in this soil, and it is a very fine shade tree anywhere.

E. Sonle had a long experience in use of timber in manufacturing. Among the varieties grown in California the osage orange was very valuable for use in wagons. Made excellent hubs, and is good for most any part of a wagon. Had repaired wagons made in Texas and Arkansas with osage hubs and found the hubs among the best he had ever seen. In those countries this timber was considered the very best. Had used California grown black locust and found it equal to the very best timber grown in the Eastern States. It was a mistaken impression that California was not a good country to grow good hard timber. The impression had arisen from the native timber being poor varieties.

The white oaks grown here are not the same as the valuable kind of the Eastern States. Eastern good varieties grown here would be as good as if grown there. There is a locust post standing in the ground in front of his house that has been there now eleven years, and is as sound now as when first set there. In planting trees for timber the best timber kinds should

be selected and then go ahead, and it will pay better than any other agricultural production. More timber can be grown on an acre of land in California in twenty-five years time than in the Eastern States in seventy-five years. Plenty of locust trees here fourteen years old are ten inches in diameter. The hickory, elm and rock-elm are very valuable for wagon purposes and both grow well here.

The subject of trees and tree planting was continued for discussion at the next meeting, and J. S. Harbison was appointed to prepare an essay on the subject. E. F. Aiken will read an essay on evergreen trees and their cultivation in this State. The club have rented the library room in Odd Fellows' building, corner of Ninth and K. streets, and the next meeting will be held there on Saturday next at 1 P.M. All agriculturists and others interested in the prosperity of the State are invited to attend and join the club. The ladies, also, will be especially welcome.

New Vegetables, Etc.

THE EARLY SHIPPING TOMATO.—This is a new and valuable variety, raised by Mr. Turner, of Norwich, and is a hybrid between "Key's Prolific" and "Crimson Cluster." It has qualities which will render it extremely valuable for Bermuda or our own southern latitudes, as it is as early as the earliest and enormously productive—having from 20 to 30 medium-sized fruits in a cluster. Above all, its solid, seedless character enables it to endure shipping much better than the larger sorts. —*American Agriculturist*.

This Tomato is undoubtedly worthy of trial in California, for the good qualities above named.

NEW FRENCH PEAR.—A contributor to the London *Journal of Horticulture* thus speaks of a new Pear, called *Pierre de l'Assomption*: "I have to-day (September 25th) eaten one of the finest pears of the month. It is large, and in color much like the Brockworth Park. The habit of the tree is robust, much like William's *Don Chretien*, of which I should think it a seedling, and it is marvellously prolific. There is none of the William's musk in its flavor, but a rich, pleasant, vinous, sugary taste."

NEW ROSES.—The *Gardener's Monthly* mentions twelve among new varieties of roses which have been originated the past season in Paris, as especially worthy of cultivation. One of these varieties is a yellow, changing to salmon, another is a white changing to yellow, and a third is termed "a rosy salmon," of a new shade.

A DWARF HORSE CHESTNUT is also described in the *Gardener's Monthly*, as a picturesque shrub producing flowers of much beauty. It is a native of the Southern States and is but little known. It is said to bear some resemblance to the California Buckeye and is perfectly hardy, and easily propagated by suckers or from seed.

Peach Trees for Firewood.

The *Farmer* recommends that those landowners who have lands they esteem of but little value, wild, hilly, side-slopes, of gravelly or sandy and decomposed rocky materials, should plant thereon peach trees for fuel, any one who will plant out 50, 100 or 1,000 acres of such land this autumn with peach pits, and permit these to grow five years, would have a fortune in proportion to the acres planted, using the trees as firewood only; it is one of the best materials for firewood known.

This would be a good speculation for any person for firewood only; it would pay splendidly, the peaches could be gathered for drying, or sold, or for large droves of swine, using peaches to fatten them. We hope this enterprise may be tried.

HALF ACRE GARDEN WILL PAY.—A correspondent in the *Germantown Telegraph* thus sets forth the blessings of a well cultivated garden: Half an acre of land in a well cultivated garden will produce as much towards subsisting a farmer's family as any three acres on the farm, beside the advantage in the cultivation of which would gratify a diversity of tastes, and contribute much to secure the blessings of health, the labor of which can be shared by the too young or too old to toil in the heavier operations of the field, and occasionally by the female inmates of the house, or the plowman from the field, by way of relaxation from toil, without any material impediment to other labors. Every farmer will promote his interest by bestowing on the garden a due share of attention.

AGRICULTURAL NOTES.

CALIFORNIA.

FRESNO COUNTY.—The grass, says the *Expositor*, is up sufficiently for stock to graze upon it very nicely now, but owing to the soft condition of the ground they can't move very much. By the end of another week it will be sufficiently advanced to fatten cattle.

LOS ANGELES—Jan 4: **SILK CULTURE.**—Mr. Romolo Bonhomme the silk culturist who lately arrived here from Europe for the purpose of investigating the resources of California, and especially Los Angeles county as to its adaptability for the culture of the silkworm, has just completed his visit to all the localities where the white mulberry tree grows. He reports very favorably of the trees, and says that they grow easily in that climate. At all places visited by him he found the trees planted too close together—otherwise he found no fault.

Mr. B. is of the opinion that California will, in the course of a few years, be the silk-producing country of the world; and that he has seen a finer specimen of the silkworm in California than ever in Japan.

About ten million dollars is annually expended for the silk eggs by Italian and French merchants. Last year an Italian silk culturist alone bought five hundred thousand ounces of silk eggs, and paid two million dollars for them. All this money goes into Japanese pockets; but could be partly brought to California in course of a few years by cultivating the silkworm as an article of export. Our climate possesses every requisite for the successful production of this source of revenue.—*Los Angeles Star*.

RIPE strawberries were presented to the editor of the *Los Angeles News*, on the 22d ult.

PLACER.—The hills around Auburn, Placer county, are green with the new grass and vegetation, and in protected spots there is now pasture enough to keep stock in fair condition from starving.

MONTEREY.—The immediate benefits of the late warm rains, says the *Castroville Argus* of December 30th, one may see in the rapidly growing grass, which, to stock interests that were languishing, must prove most timely.

NAPA Reporter: ALFALFA.—A correspondent traveling up through our valley, writes from Oakville as follows: "During the past week I have visited the ranch of Capt. M. G. Richie, whose farm lies directly on the opposite side of the creek from Oakville. This gentleman's ranch is devoted largely to stock-raising and grain growing. Among the varied productions which I saw there, I make mention of one of the finest crops of alfalfa I have seen in the State. At the present writing (Jan 1st.) it is about a foot high and standing very thick upon the ground. The Captain informs me that he makes from two to three crops a year, the first cutting commencing in May and the second in July. He says it turns off about three tons to the acre, and makes one of the very best of feeds for horses and cattle. It was first imported from Germany to Chili—hence it is often called Chili clover. From Chili it has been brought to our country. The time for sowing this seed is March. It will thrive upon any soil where there is no 'hard-pan' or bed-rock between it and water. The roots have been known to go down thirty feet to water! As this grass or clover is so valuable a food for horses and cattle, I should like to see many of our farmers introduce it upon their soil. Capt. Richie has kept from 400 to 500 head of cattle upon his alfalfa—two to the acre—and their looking sleek and fat proves its great nutritive power. It is also an evergreen, and looks beautiful when sown in door-yards and around public walks. Let the rich soil of our valleys smile with its verdure and our formerly oat-covered hills teem with its abundance."

The value of grain in Napa warehouses is estimated at \$250,000.

SACRAMENTO—**STATE AGRICULTURAL SOCIETY.**—This society is under the management of a State Board of Agriculture, consisting of a President and nine Directors.

The present Board consists of Charles F. Reed, of Yolo, President; Edgar Mills, Robert Hamilton, C. T. Wheeler and W. P. Coleman, of Sacramento; R. S. Cary, of Yolo; E. J. Lewis, of Tehama; Coleman Younger of San José, and Wm. Blanding and H. R. Cooney, of San Francisco, Directors. The officers of the Board are: R. T.

Brown, Sacramento, Treasurer; Robt. Beck, of Sacramento, Rec. Sec.; and I. N. Hoag, of Yolo, Corresponding Secretary. The next annual meeting for election of a President and three members of the Board will be held on the 24th of the present month. The next annual Fair will commence on the 12th of September and continue ten days. The exhibitions of this society are among the most important events of the year, and embrace samples of the products of all the industries of the entire State. At the last exhibition some twenty Atlantic States, China, Japan and Australia were also represented by their products.

The biennial reports of the society are justly classed with the most valuable public documents published by order of the Legislature, and are eagerly sought for in all portions of the world for the reliable information they contain respecting the industries of the State. The society are now the owners in fee of one-half and virtually, so far, of all the ground they occupy in this city as stock grounds, known as Agricultural Park. The Park is leased for the present year for the sum of \$5,000. The receipts of the society during the past year are \$44,319.37; expenditures to date, \$44,378. A considerable of the expenditures have been for permanent improvements. The rooms of the society are in the Pavilion, corner of M and Sixth streets.

Record: WINE-MAKING BUSINESS.—L. A. M. Pascal, a few miles from Sacramento, has succeeded in making the best of claret wine from California grapes. He thinks that there is not a better climate upon the face of the earth than this State for making wine. He proposes to make claret wine here far superior than the so-called French claret, imported from Europe. He has made some this year much stronger, and a better flavored article, than any wine imported from France or elsewhere. Mr. Pascal has tried the experiment in the Eastern States and found the climate too cold in the spring, with too much rain in the summer. Mr. Pascal says that the wine manufactured in France never reaches this continent without adulteration.

SHERMAN ISLAND.—This last storm has proved what a good and strong levee will stand when properly made, and many, no doubt have had their attention called to see how far we, the people of this Island, have suffered. This is probably the first time in the history of man that this Island has escaped a flood, and many told me, that lived upon the river above us, that our levee could not stand the pressure that would be brought to bear upon us; but the very parties to day would like to change positions with us, as they at this time are under water.

The Strength of the Levee.

Our levee is 8 ft. high at this time, with a base of 24 feet, built in the dry season, so that by the time the rain came it was well settled in every respect. The Trustees showed good foresight in commencing this early, for no doubt had the building of it been put off until last fall, the result would have been that we would have been under water. Much complaint was made by some of the owners of land because the assessments were so large, and at an early date. It is true it came hard with two dry years together, but just think of the good that has resulted from it. Contrast our lot to what it has formerly been; as soon as the heavy rains come on, and they feared a flood. Stock had to be taken off at a great expense to the owners, besides having losses in various other ways. The water has been as high at Sacramento this week as it was in 1852. To-day, at high water, the water stood only sixteen inches in my front, and when the tide is out, my whole front on the river is perfectly dry. The tide falls four feet at my house. How much better are we placed than those above us on the river.

Loose Stock Roaming About.

Of all curses that ever befell man, is the practice of letting stock run loose to prey upon their neighbors, and certainly no man in this place has suffered more than myself. My entire stock of roots for seed and feed for the coming year has been destroyed. Not a vestige left; and this by sheep, during the winter and fall. Bands of horses at night have stripped my corn-field of corn, and the sheep have trampled the balance under foot, so that at this time the crows hold daily a soiree on the debris. It is at night, when we are asleep, that most of the damage is done. I hope that some action will be taken by the Legislature to pass a bill that will protect the innocent. It costs too much to fence, and I contend that no man should

have any more stock than what he can properly take care of and feed.—*Cor. Bulletin*.

Since the above was in type the Sherman Island levee has been broken by the flood. Mr. Walker, Supt. of the Tide Land Reclamation Company, returned to this city after an inspection of the broken levee at Sherman Island, and the levees at Grand Island and other neighboring localities. He says that the break in the Sherman Island levee is only seventy-five feet in extent, and will soon be stopped. It occurred in the old levee, which has the ditch upon the inside instead of upon the outside of the embankment. This of course weakens the embankment considerably. The new levees are all constructed with the ditch upon the outside. Mr. Walker says that the whole cost of the repairs rendered necessary upon the company's lands and works by the recent storm, will not exceed \$1,000.—*Alta*.

SANTA BARBARA.—Some apple, peach and almond trees in Santa Barbara county, still retain their leaves, awaiting weather cold enough to check their growth.

SANTA CLARA.—The financial condition of the Agricultural Society is sound. The expenses of 1871 were \$8,346.85; receipts were \$10,729.90; balance on hand January 1st, 1872, \$2,373.95.

SAN JOAQUIN.—John Olive of this city, says the *Stockton Independent* of the 6th, handed us a sample yesterday of this season's growth on his premises. The straw is about thirty inches long, and the heads are large and the grain fully developed. He likewise handed us a sample of wheat about two thirds grown. The straw is of strong growth, and is about thirty-two inches in length and just about ready to head out.

Vallejo Chronicle, Jan. 6: GRASS.—The hills are assuming a verdant hue, the warm rains starting the grass vigorously. All the old herbage is worthless for feed, the rains rendering it innutritious, and the cattle who have nothing else to feed upon are in a very feeble condition. If the warm weather continues, the new grass will afford feed in a couple of weeks.

HIGH WATER.—The great volume of water coming down the Sacramento and San Joaquin rivers, keeps Carquinez straits full to high tide level. The waters in Vallejo Bay, into which the back waters press, also remains about stationary at nearly high tide level. The Bay is now filled with fresh water.

FROST.—Last night was very cold, the wind having shifted to the north, and this morning the ground was nicely covered with frost like a New Year's cake. After so much rain, a cold spell does very well for a variety.

Argus, Jan. 6: But little traveling is done by the people on account of the extremely soft condition of the roads, and hence times are very dull. Farmers are rejoicing over their prospects for crops the coming harvest, and all are anxious for fair weather, to enable them to plow and plant their lands in grain. All fears of a drouth have vanished, as the ground appears to be thoroughly saturated, and water is standing in holes and ponds all over the flats.

SAN MATEO.—Warm weather will insure an abundance of feed in San Mateo.

YUBA—Appeal, December 30: MORE LOSSES.—Those flooded in the slough lands, whose farms are in alfalfa, will lose nothing except fences, and the loss of these will be more than made up in the destruction of the gophers and squirrels which infest these lands. But those whose lands were not in this situation will lose heavily. Dr. Teegarden, who is one of the heaviest losers, will suffer the loss of his fine nursery and orchard, as the water is sweeping completely over it. This land was soft, well cultivated, and could offer no resistance to the flood. His loss will probably reach \$5,000.

COLORADO.

Greeley Tribune, Dec 18: WINTERING CATTLE.—We had another snow last Saturday night and Sunday, falling on the old snow, which was crusted. Snow fell at Liverpool fifteen inches deep, and we understand all along the foothills. Previously the ground was bare, and thousands of cattle had been driven thither from the plains and valleys. What is to be the fate of the immense number of cattle in the ranges down the Platte and along the mountain remains to be seen. It is certain that if cattle keep through this snow and cold without any considerable mortality, Colorado will be proved better than supposed for stock. Should many cattle die, legitimate farming will be entered upon more generally.

LAND SALES.—Since the National Land Co. opened its office in Denver, it has sold for the Denver Pacific Railway Co. 72,719 acres. Since the Kansas Pacific Railway lands were ready for sale—just ten months—its sales to Dec. 1st, aggregate \$458,000.

IDAHO.

Idaho Statesman, Dec. 10: CATTLE.—Something like 2,500 head of cattle are now on Snake river, to the west of us, where they will winter. The range is unlimited and the grass excellent.

MONTANA.

Helena Herald, Dec. 21: HAY.—Hay is coming into market in good quantities, but commands \$25 per ton. Ranchmen will reap a harvest this season, inasmuch as \$16 per ton has been considered a fair price during the past three seasons.

Avant Courier, Dec 14: DISTRICT FAIR. A meeting of the stockholders of this Association is called at Gallatin City. We understand that a contract has been let to complete all the buildings necessary for the holding of a first-class Fair.

Deer Lodge Independent, Dec. 18: A ranchman living near Doer Lodge, having a sick horse, appealed, a few days since, to a veterinary surgeon of the place for advice. He instructed him to give the animal linseed oil. The ranchman forthwith gave the horse about three pints. He lived about twenty minutes.

Major Davenport succeeded in getting his flock of sheep over the range, only losing 23 head.

FINE REGION.—From Reed's ranch north, the country is generally open, and, like the Prickly Pear Valley, possesses natural advantages for agricultural pursuits. Water and timber are plenty, while the valleys are wide and the soil rich. Snow scarcely ever falls to a depth of over 2 or 3 inches, and the pine-covered mountains are easily accessible to those who desire building material.

The route to Roberts' new Trading Post can be readily followed with wagons. The original trail, made by the Indians, runs through the loveliest of rich valleys, the grandest of sublime cañons and over the most magnificent rolling country in the world. The Post has been located on Elk Creek, 6 miles above the Judith Gap, and in a neat basin about a mile deep, and about one-fourth of a mile in width. The hill sides are covered with a heavy growth of pine and fir trees; springs of clear, cold water are abundant; grass, even at this season, is plentiful, and affords sustenance to both stock and game. Of the latter there is an abundance. Great herds of buffalo roam the plains outside the mouth of the basin; bands of from 50 to 500 elk are often seen upon the bald hills, and flocks of blacktail and antelope are hourly seen, crossing the bottoms or grazing on the mountain sides.

WILLOW CREEK VALLEY.—Among results obtained by Mr. Paul from his farm the past season, are mentioned 2,000 bushels of grain, 600 bushels of potatoes, 500 bushels of turnips, 4,000 head of cabbage, 3,000 pounds of pork, and 150 tons of hay. Important improvements are observable in all parts of the valley. The neighborhood the passed season has materially increased in numbers; neat homes have been carved out by courageous immigrants; a flouring mill has been decided upon and will be built at some point on the creek another summer. Willow Creek Valley is thus coming to the front as an important agricultural region.

OREGON.

Jacksonville Sentinel: A LARGE VINEYARD.—We learn that Mr. Charley Bennett has purchased of Mr. J. N. T. Miller the field lying opposite to his residence, containing about 12 acres, for \$500. This is a splendid piece of land, and Mr. Bennett will put it all in vines this spring. Grapes and wine will yet be among the chief productions of this valley.

SEVERE WEATHER IN EASTERN OREGON.—The *Dalles Mountain Messenger*, referring to the storms of December, pronounces them the severest experienced in those parts by white men. It snowed, rained or hailed constantly for twenty days. The conductor of a government freight train on its way from Eugene City to Fort Klamath, was obliged to leave his wagons and goods on the road and got in with only five out of twenty-nine mules; twenty-four perished on the road, and those which got in were not expected to survive many days.

ICE IN THE COLUMBIA.—Navigation above the cascade, on the Columbia river, has lately been very much impeded by ice. In case of a freeze-up on the river the mails will be carried by boat.

Notes on Sherman Island.

The PRESS has been to Sherman Island, not only to it, but all over it, and having returned in safety, we propose to give some of our experience in that famous isle. Taking the little stern-wheeler Pilot, at San Francisco, we left the wharf about 11 o'clock A. M., and steamed up the bay, enjoying a fine view of the surrounding hills that were trying to look green after the first rain of the season. Passing through the Straits of Carquinez, the Pilot made short stops at Benicia, Martinez and Long Island. It looked very strange to see among the freight, mutton for Benicia, and potatoes, grain and hay for Martinez and Antioch. The country and not the city usually produce these necessary articles, but here the case seemed reversed. Of course the dry season is in a great measure responsible for the anomaly but it seems almost impossible for an article to pass from the producer to the consumer without its being hauled by one or more commission merchants, even if that takes it fifty or a hundred miles out of the shortest route between the two.

Long Island

Is owned by Dr. Ryer, who has this year surrounded it with a dike and erected buildings, preparatory to cultivating what has heretofore been nearly useless marsh land. Being on the Suisun Bay the island will not be so liable to overflow from freshets as those lands further up the river, where the waters are more confined. On the other hand there is some difficulty in obtaining water that is not brackish in the latter part of the dry season, when the rivers are low. Artesian wells may, as is hoped, overcome this last inconvenience.

Antioch

Was reached a little after dark, and here the Pilot tied up for the night, but was early next morning on her way up the San Joaquin, with the fog whistle blowing almost incessantly. About twenty minutes brought us to Bogg's Landing on Sherman Island. The landing is as yet quite primitive in its character, but it will doubtless be improved as the travel and freight by this route increase. The owner of the landing, and about 600 acres of land adjoining, is Mr. P. H. Bogg's, a native of Maine, who, we take it, finds the tule lands as profitable for farming as the granite hills of his native state. Mr. Bogg's had a large part of his farm in grain last season, and the result was so favorable, that he is now employing all the men and horses he can spare to break up the sod on the remainder. For this work he employs four horses to each plow. The turf is allowed to lie in the furrow until spring when the drying north winds soon fit it for burning. The improvements being made in building, indicate that Mr. Bogg's intends to hold his own whether there are floods or not. That success may attend his efforts is the wish of the PRESS, which is indebted to him for many kind acts of hospitality.

The Area of the Island,

According to the government survey, is about 14,000 acres, of which the levees contain in the neighborhood of 13,000. For about 12 years efforts have been made to cultivate portions of the island, with varying success. Until the past year the amount of capital and labor expended on the levees was not enough to make them of sufficient size to keep out unusually high tides or freshets. Usually each man attempted to reclaim his land independently of his neighbors, and of course the cost per acre was much greater for a given size of levee, than it would have been if large tracts had been included by the same.

Union is Strength,

As the old motto says, and the settlers at last became convinced of this, and combined their capital and labor in the building of one continuous levee, high enough, and strong enough to keep out the highest tides in ordinary stages of the river, and some think during the floods also. The experience of the past year certainly indicates that the heavy expense was justifiable. The crops of hay and grain have been the finest in the State, and the price of land has greatly advanced. We heard of but two pieces of land for sale on the island, one of which is almost without improvements, and covered for the most part with the original swamp growth is held at \$40 per acre; the other can be all cropped next year, and some stock and improvements, and is held at \$60. These figures may seem high to some of the upland farmers, and to those whose experience

among the tule lands has been confined to such as were not properly reclaimed; but of course the actual productiveness of land is what regulates its price. Some of these lands which were rented last year at $\frac{1}{4}$ of the crop, and were cultivated in grain, gave their owners a return of \$15 to the acre, or 25 per cent. on \$60. Few safe investments will pay better than that, even in California. Mr. Joseph Upham sold this season one piece without improvements at \$50, and another with buildings, orchard, etc. at \$60 per acre. He has about 2,000 acres remaining, but none for sale.

Land to Rent

Has been in great demand; many of the upland farmers being attracted by the certainty of bounteous crops. Of course but a limited number could be accommodated, and many went away disappointed. Probably the recent rains will do much to console such for the present, and next year they can try their fortunes, if they wish, on the lands which are being reclaimed by the Reclamation Company, and others.

We were informed at Emmaton that the population of the island numbered about 700, but of course it varies much at different seasons of the year, like that of most of our agricultural districts.

Sinking of the Land.

All of the old settlers agree that the tule land, which has been reclaimed and worked, has sunk from its former level from one to two feet. This corresponds with the experience of those occupying similar districts in other parts of the world, and is the natural result of several causes. First, most of the land is burnt off to remove the tough, thick sod which covers it. The water being drained off, the air penetrates the soil and causes the decay of the vegetable matter which it contains, and thus decreases its volume. The tramping of animals also plays an important part in compacting the light soil.

Clearing the Land of the Sod

Is the first step towards putting the land into cultivation after draining, and fire is the agent which must be used in almost every case. We saw a few small pieces of land which had been covered with the finer marsh grasses, which, after being tramped by cattle for several years, had become compacted and rotted sufficiently to be brought into cultivation by means of the plow and harrow. Usually, however, when the sod is broken up by the plow, it becomes so dry and tough that it hinders cultivation until it is burned off. Fortunately this is easily done after one of our drying northers. It is needless to say that plowing up the virgin tule sod is severe and expensive work, but if once well done it need not be repeated, and the farmer has his reward in the richest soil in California, with an unlimited supply of water at his command. This plowing before burning is necessary only in particular cases. Hundreds of acres of land on Sherman and other islands needed no plowing until after the first, and in some cases the second and third crops had been taken off.

Time to Burn.

The great cause of trouble has been the want of experience in this peculiar kind of farming. It is now known that the sod should be burned off as soon as possible after draining the land. If the diking is done in the winter, or early spring, the land should be dry enough to burn the next autumn; that is to say, the portion nearest the dikes. The land lying far back from the main water-courses is found to be a little lower than the rest, and usually takes a season longer to dry sufficiently for burning. When the sod is in just the right condition it can sometimes be burned off from a very large area by simply touching a match to the grass in one or two places. If unburned spots, islands as they are called, are left, they should be re-fired and burned out clean the first season if possible; when left, they often prove a source of great annoyance in harvesting, and have to be plowed out at some future time.

Small Cost of Putting in a Crop.

When the ground is burned without plowing and the grain trampled in by sheep there is probably no land in the State that can be so cheaply seeded.

The Messrs. Prather & Minor have been the most extensive experimenters, and as far as we can learn, the most successful, in this method of putting in grain crops. They burned off what was sufficiently dry of Twitchell Island in the fall of 1870, the fire taking a broad strip all around the outer edge. About 1,000 acres were thus cleared of sod and covered with ashes. Of this area the proprietors cropped about

600 acres, the remainder being let out. As near as can be estimated from the books kept by Mr. Geo. Prather, the cost of preparing the land, sowing the seed and tramping it in, and the seed itself, was about one dollar per acre. The seed used being from 25 to 30 lbs per acre. The harvest, as many of our readers know, was highly satisfactory, being by actual measurement on a portion of the land as high as 80 bushels to the acre, and altogether the enterprise paid a handsome profit. That portion of the land which was too wet to burn last year has this season been in first-rate condition, and the burning has progressed finely. Burning 1,500 acres cost \$75, according to Mr. Prathers. Twitchell Island we take to be only a fair example of what may be done with this sort of land, in the hands of thorough, practical farmers, who study carefully the experience of others, and avoid their mistakes. On Sherman Island much of the land lay in a partially reclaimed state for several years, and the settling and decaying progressed far enough to interfere seriously with burning, while it did not go far enough to fit the land for cultivation by simple plowing and harrowing. Such land must be plowed before the sod can be burned off clean.

The Tule Lands as Pastures.

Pasturing cattle on new tule land is usually a serious impediment to its after cultivation, the softer portions being tramped down, while the rest is left in the form of tussocks, standing above the general level, and very troublesome to get rid of. The marsh grasses are at best very poor when compared with such as can be raised in perfection on the land after a year or two of cultivation. Mr. Biglow, who with his brother owns a farm of 487 acres on the Sacramento side of the island, gave us some interesting figures on this point, which we were careful to set down at the time, as he said that some mistakes in regard to his crops had got into the papers. During the past season he had a piece of land in barley and alfalfa together. The barley was cut for hay, yielding from two to three tons to the acre. The alfalfa was cut three times giving about $1\frac{1}{2}$ tons each time. The second season the alfalfa should yield more than the first, but most farmers would think Mr. Biglow's four crops a good return for a dry year. Six acres of volunteer barley were plowed in August, 1870, and sowed with Timothy the next February. The volunteer barley was pastured all winter, and allowed to ripen in the spring, giving 75 bushels to the acre. Some of the grass died out, but a portion that was irrigated gave a good stand. Another piece was seeded in February last with wheat and alfalfa. It gave 45 bushels of grain to the acre, $1\frac{1}{2}$ tons of hay, and pasturage for a long time.

The Character of the Dikes.

As the first and last thing to be done in the reclamation of tide lands is to keep out superfluous water, the size and quality of the dikes is of course of the greatest importance. The dikes now favored by our tule farmers are much superior to those which they formerly supposed would be sufficient, but we think great improvements will still be made in their construction. That which surrounds Sherman Island is by no means uniform in its quality. Some portions are firm and compact, with a broad base, and a height of six or seven feet, while in other places it is much lower and so narrow that it has dried out, and cracked badly. This cracking is one of the most serious difficulties to overcome in building dikes of peat, especially in our dry climate, but we think it can be overcome where the builders endeavor to pack the material firmly, rather than to gain the greatest height at the least expense. We heard of one case where the dike was made much firmer by turning cattle on it immediately after its construction and keeping them there until they had tramped it well together. On the north coast of Europe it is customary to build the dikes broad enough for roadways, and as they are compacted and settle from the travel on them, fresh material is added to bring them up to the required level. There can be no doubt that when the true value of our tide lands is appreciated much larger sums will be expended in their reclamation than have heretofore been considered warranted.

Some Difficulties of Cultivation.

It could hardly be expected that the unaccustomed crops of these lands could be secured without some difficulties not met with by the upland farmers. We had heard that the horses on Sherman Island had to be provided with broad wooden shoes, to keep them from sinking up to their bodies in the boggy soil, but we did not

see a single animal thus provided, although there were some of the shoes lying about. Doubtless they are sometimes used, but on most of the land a horse does much better without them.

Cracking of the soil often occurs on grain land to such an extent as to interfere seriously with harvesting, but from our observations we think that in most cases this could be avoided by a reasonable amount of care. Some have already learned to do so by digging plenty of ditches and keeping them nearly full of water. We understand that the same remedy is used on the shores of the North Sea, in Europe. The potato patches, and such ground as is much tramped over, as pastures and roads, are not troubled with cracking, which would indicate that thorough cultivation is one of the best remedies.

Wharves and Ferry.

There are two substantial wharves on the Sacramento side of the island, one at Emmaton where the regular steamer stops, and another a short distance above, owned by Mr. Cathers, and patronized by the opposition boats. The inhabitants of the island thus have frequent communication with San Francisco and Sacramento, as well as the various points on the route between these two places. Most of the produce is sent to San Francisco in schooners, at a cost of about one dollar per ton. About one-half or three-quarters of a mile below Emmaton, a flat-boat ferry, owned by Mr. Beasley, connects the island with the Solano Co. shore, and is a great convenience to travelers and stock drivers.

D. L. Perkins, the Veteran Seedsman,

Has a farm of 100 acres between Emmaton, and Cathers'. We are sorry to say that he does not find the location well suited to his business, on account of the high winds, which waste some of the lighter seeds. This season he has leased 75 acres of his farm, and will put in the remainder in grain. Mr. Perkins, many friends will regret this change of business by one who has won so many honors in his favorite pursuit, and wish him good fortune in his new venture.

Dr. D. G. Perry

Owens 170 acres next above the Biglows', all of which is in cultivation, with the exception of two or three acres. The year past he had 70 acres of wheat which averaged $42\frac{1}{2}$ bushels to the acre. About half of it was considered light, while a part of it was very heavy. A piece that was harvested about the 1st of July was irrigated afterward, and at the time of our visit, the middle of December, was heading out for the second crop, which would make good hay. Some was plowed later and irrigated, and gave more good feed than the Doctor's stock could dispose of. A small pasture of clover, on ground which had also given a good crop of barley hay the past season, was doing well.

The Doctor makes a speciality of fine seed potatoes, of which he has several varieties, including the Early Rose, Climax, Excelsior, Brezee's Prolific, etc.

Blackberries and various kinds of fruit are also doing finely on the place.

Too Many Potatoes.

Many of the island farmers find that they have made a mistake in planting large quantities of potatoes. They took it for granted that the drouth would cut off the crop in the greater part of the State, but now find that they were mistaken, as the foothills, and several of the coast counties had enough rain to produce a good yield. An unusually early frost also added to their misfortune by killing the vines while many of the tubers were still small.

Although the potatoes are hardly paying for digging, some of the farmers intend to try the same crop next year, as they say that the majority will be disgusted with the low prices, and plant none for the market, so that it will not be likely to be glutted.

Fine Varieties.

Those who took pains to secure fine varieties for planting, now reap their reward in selling them for seed at an extra price. Mr. Edward Date rents land from Mr. Upham on the upper end of the island, and had 150 acres in potatoes, mostly Early Rose and English Flukes. He already has offers much above the prices given for the common Humboldts. Good stock pays best, in potatoes, as well as cattle and horses.

We are glad to say that prosperity has not hardened the hearts of the Sherman Islanders, and that their hospitality is as generous as their grain crops. May their shadows never be less.

USEFUL INFORMATION.

ADVANTAGES OF CRYING.—A French physician is out in a long dissertation on the advantages of crying and groaning in general, and especially during surgical operations. He contends that groaning and crying are two grand operations by which nature allays anguish; and those patients who give way to their natural feelings more speedily recover from accidents and operations than those who suppose it unworthy a man to betray such symptoms of cowardice as either to groan or cry. He tells of a man who reduced his pulse from one hundred and twenty-six to sixty, in the course of a few hours, by giving full vent to his emotions. If people are at all unhappy about anything, let them go into their rooms and comfort themselves with a loud boo hoo, and they will feel a hundred per cent. better afterward.

In accordance with the above, the crying of children should not be too greatly discouraged. If it is systematically repressed, the result may be St. Vitus' dance, epileptic fits, or some other disease of the nervous system. What is natural is useful; and nothing can be more natural than the crying of children when anything occurs to give them either physical or mental pain.

EATING WITHOUT AN APPETITE.—It is wrong to eat without an appetite, for it shows that there is no gastric juice in the stomach, and that nature does not need food; and not needing it, there being no fluid to receive and act upon it, it remains there only to putrify, the very thought of which should be sufficient to deter any man from eating without an appetite for the remainder of his life. If a tonic is taken to whet the appetite, it is a mistaken course, for its only result is to cause one to eat more when already an amount has been eaten beyond what the gastric juice supply is able to prepare.

The object to be attained is a larger supply of gastric juice, not a larger supply of food, and whatever fails to accomplish that essential object, fails to have any efficiency toward the cure of dyspeptic diseases. The formation of gastric juice is directly proportioned to the wear and tear of the system, which is to be the means of supplying, and this wear and tear can only take place as the result of exercise. The efficient remedy for dyspepsia is work—out-door work—beneficial and successful in direct proportion as it is agreeable, interesting and profitable.—*Hall's Journal of Health.*

BAD EFFECT OF HAIR RESTORERS.—A correspondent of the *Country Gentleman* says that he has under his care two invalid ladies. "One has been paralyzed on the right side for nearly three years, and has been utterly helpless most of that time. Her vision has been very imperfect; her knowledge of past events has utterly departed from her; recently she appears to be recovering her recollection, and can count with tolerable accuracy as high as twenty." He attributes her prostration entirely to the use of a popular hair restorer. "The other case is not so bad, but bad enough. For the past year her eyes have been an occasion of constant torture. The retina has become so sensitive to the light as to make a dark room indispensable. Wheels of burning flame revolve constantly before her eyes, attended by lightning-like flashes, which are terrible to bear. She is another victim to the poisonous lead contained in the same popular hair-restorer."

CHEMICAL EXPERIMENTS.—Most persons have an idea that it requires a great deal of expensive apparatus to show or perform chemical experiments. Such, however, is not the case; a great many pleasing and instructive experiments can be shown without any more apparatus than can generally be found in every dwelling. And with the addition of a few glass tubes of various diameters, a dozen or two test-tubes, a pint flask or two, and an assortment of ordinary glass bottles and corks, there is scarcely an experiment that may not be attempted with fair prospect of success. In order to make bell glasses it is only necessary to cut the bottom out of bottles, and grind the surface of the incision.

CURIOUS FACTS.—A curious observer has discovered that men and boys invariably run the heels of their boots and shoes over outwardly, while women and girls always run theirs over inwardly. Out of one hundred and forty-seven men and boys that passed the observer at a given point, this fact was true in every instance; out of sixty-seven women that passed, it was true in every instance but one.

GOOD HEALTH.

DETERIORATION IN MILK IN FEEDING BOTTLES.—Prof. Gunning, the Government Analyst at Amsterdam, writes: I object to the infants' bottles in all instances where any part of them is composed of caoutchouc or india-rubber, or any like material. There is nothing so ill suited to the constitution of the human body as the material in question. When, in consequence of suction, the pores of the caoutchouc are enlarged, some portion of the milk always remains behind in them, which cannot, or at least cannot without great difficulty, be moved. This milk quickly becomes bad, and spoils the fresh milk with which it comes in contact. The caoutchouc material in question is made up of several ingredients. White zinc, or white lead, is very commonly employed, which is very poisonous. My objections are not founded exclusively upon *a priori* conclusions. In this country many fatal cases have happened among infants, which on solid grounds may be ascribed to the use of these bottles."

If some enterprising inventor will give the world a substitute for rubber, he will confer a great favor and make money beside.

THROAT DISEASES are so prevalent at this time that we commend to our friends a new remedy which is fully described in a late number of the *Pacific Medical Journal*. It is bisulphite of soda, in large and continuous doses. Diphtheria, inflammation of the tonsils, and quinsy through local exhibitions, have their source in poisonous fermentations of the blood, the same as scarlet fever and other zymotic diseases. It is held that the salt prescribed enters into the circulation and retards putrefactive fermentation. Dr. Tyrell failed of success when he administered it in small doses and in three-hour intervals; but when he gave thirty-grain doses every hour, day and night, so as to saturate the system with the salt, he was almost invariably successful in removing all the severe symptoms in twenty-four hours. The object of publication is to induce physicians to give this medicine a trial, that the curative effects may have more extended proofs.

KEEPING FRUIT IN OUR ROOMS.—We should be chary of keeping ripe fruit in our sitting-rooms, and especially beware of laying it about a sick chamber for any length of time. That complaint which some people make about a faint sensation in the presence of fruit, is not fanciful—they may be really affected by it; for two continental chemists have shown that from the moment of plucking, apples, cherries, currants, and other fruits, are subject to incessant transformation. At first, they absorb oxygen, thus robbing the surrounding air of its vital element. Then they evolve carbonic acid, and this in far greater volume than the purer gas is absorbed, so that we have poison given us in the place of pure air, with compound interest. Temperature affects the rate of changes, warmth accelerating it.—*Good Health.*

PUMPKINS FOR INFLAMMATORY RHEUMATISM.—At a recent meeting of the New York Farmer's Club, a correspondent wrote of the virtues of pumpkin, giving the following instance of its value for inflammatory rheumatism: A woman's arm was swelled to an enormous size and painfully inflamed. A poultice was made of stewed pumpkins, which was renewed every fifteen minutes, and in a short time produced a perfect cure. The fever drawn out by the poultice made them extremely offensive, as they were taken off. I know a man cured of inflammation of the bowels by the same kind of application.

HOW TO TREAT A STY.—The sty is a small boil protruding from the eyelid. It will usually pass away of itself, but its cure may be hastened by applying a warm poultice of bread and water in a small linen bag. Apply three or four times a day, and each time foment the eye with warm milk and water.

DRINKING AT MEALS.—In the use of liquids as of solid food, desire is the best guide. We should drink when we are thirsty, and as we are usually thirsty at meals, especially when our food contains little water, we should drink with freedom, and usually to the full extent of the desire.

The Succession of Seasons.

EDITORS PRESS:—Following is the rainfall in this locality for December, 1871. With the exception of a shower on the 2d, the month continued so dry until the night of Sunday, 17th, that many and grave were the predictions of "another dry year."

Since then, we have had our share of the abundant rains which have fallen throughout our State, to make glad the hearts of our people. The heavy rains commenced between 7 and 8 P. M. the 17th. The result for the month is as follows:

DATE.	INCHES.
Dec. 2—Showers between 5 and 9 A. M.	0.04
" 18—To 7 A. M.	2.66
" 19—To 7 A. M.	1.93
" 20—To 7 A. M.	0.58
" 21—To noon.	0.12
" 23—To 8 P. M.	0.54
" 24—Showers to 7 A. M.	0.02
" 27—Between 7 and 12 A. M.	0.17
" 28—To 7 A. M.	0.11
" 29—To 8 P. M.	0.44
" 30—To 8 A. M.	0.11
" 31—To midnight.	0.47

Total for December, '71.....7.19
Add for October and November, '71.....1.33

Total to date for the season.....8.52

This makes an *inch* and a *quarter* more than fell all last season; the entire amount then being 7.24 inches. In December, alone, we have had almost as much as fell in the season of '70 and '71.

If those who have a complete copy of Dr. Logan's Rain Table giving the rain for each month, at Sacramento, since '49, will compare the amount of rain this December, with the number of inches each December succeeding a dry year, they will find another remarkable agreement that tends to confirm the principle of a regular succession in our seasons, which was pointed out in the *RURAL PRESS* for November 11th. Attention has already been called to the fact that as far as past observations go, the Sacramento rain-table answers very well for our valley.

That table gives for Dec., 1851.....7.07 inches
" " 1857.....6.63 "
" " 1864.....7.06 "
Now we have for Dec., 1871.....7.19 "

That is, for each December immediately after a dry year, our valley has had a little more or less than 7 inches of rain. Is this not a striking correspondence in seasons, to say the least?

It is very easy to say, "It just happened so." But does it not look as if there is a principle of succession here that has its origin in the laws of nature which produce the seasons in our valley? And does it not tend to confirm the inference that we may confidently expect a rainfall this winter ranging at least from 17 to 22 inches?

While speaking of these agreements, notice another, though not an important one, between the seasons of '64 and '71.

Whole rain at Sacramento in winter of '63 and '64.....7.86 inches
Whole rain at Sacramento, Dec., '64.....7.86 "
Whole rain here, winter of '70 and '71.....7.24 "
Whole rain here, Dec., '71.....7.19 "

Close race that, between these December rains and the preceding seasons.

J. W. A. W.

Turlock, Stanislaus Co., Jan. 1, 1872.

Unfermented Juice of the Grape.

EDITORS PRESS:—In your "Notes of Travel in Santa Clara County," published in the *RURAL PRESS* of Dec. 16th, under the head of "Unfermented Juice of the Grape," it is stated that Dr. B. F. Headen has invented a process by which the juice of the grape may be preserved sweet or without fermentation any length of time. What the invention consists of I do not know.

I will give you, however, and the readers of the *PRESS* our mode of preserving the juice of the grape, or the juice of any other fruit, free from fermentation for any length of time. The process, as practiced by my wife, is original with her. She has so preserved the juice of the grape for the last ten or twelve years. That is to say, she has put up more or less of it every year for that length of time. It has not kept so long, however, because it is too good to keep. She has it now two years old, and I think some that is three.

You, and more particularly those "making inquiries as to where this unfermented juice is manufactured," will perhaps be a little surprised to learn that the process is identical with the one practiced by almost every housekeeper in the land in the preservation of fruit in tin cans, glass jars,

bottles—that and nothing more. Both depend for success on the same principle—the exclusion of the air.

Any one who can put up, and preserve, without fermentation, a bottle of grapes, hulls, seeds and all, can, in the same way, preserve the juice *without* the hulls and seeds. Why not? It is a temperance drink, pure and wholesome, and contains not a particle of alcohol.

That none may fail who desire to try it, I give the mode in detail:—Gather clean, ripe grapes; strip them from the stems; put them into a stew kettle and bring to the boil; turn them into a sack, press out the juice; put the juice back into the kettle and bring it again to the boiling point; then set it off and with a funnel, fill it into bottles—champagne bottles are best—till they are full. My wife's mode of sealing is as follows:—Have some strong muslin cut into pieces two inches square, as many as there are bottles to be filled; then melt some resin in a convenient vessel; add thereto sufficient tallow to render it slightly elastic, so that it will not break or crack in cooling and admit air. With this melted resin cover one side of the two-inch square cloth; lay it over the mouth of the bottle and with the hand press it down around the neck of the bottle; tie a little string around it, then put a little more resin over the top. If the work is properly done I will guarantee it to keep from one to a thousand years—if not sooner drank.

HIRAM POMEROY.

Milpitas, Dec. 25, 1871.

Reproduction of Forest Trees, Etc.

EDITORS PRESS:—I noticed sometime since an article in your paper in regard to the reproductiveness of certain native timber. I have been a resident of this State twenty-two years, during which time I have had ample opportunity for observing the growth and reproductive qualities of our different forest trees.

Redwood—Which is the principal material used for nearly all ordinary building purposes in this State, and which is being so rapidly used for the purposes mentioned, that the day is not far distant when it will be among the scarcest of our timber trees, reproduces itself by suckering, which process is so slow that it can only become beneficial to generations in the very distant future.

In proof of this I will mention a stump from which the tree was cut 18 years ago. This stump is six feet in diameter, and has put forth three suckers or shoots—the largest of which has attained a height of about twenty feet, and is ten inches in diameter at the base. Now, if we cut this eighteen-year old sapling down, we will discover that the solid wood part is only about one-fourth the thickness of the whole tree, and the balance, owing to its spongy nature, is unfit for any use, and will decay a short time after being cut.

The Oaks—Of which we have several varieties, including what is known as white oak, black oak, red oak, live oak, and tanbark or chestnut oak, are all, with one exception (white oak), reproductive by suckering; but none of which thus far—owing perhaps to climatic influences—have to any great extent been utilized, except for fuel and for tanning purposes.

The chestnut oak, is a very beautiful evergreen, much resembling the European chestnut in foliage. It is a rapid grower and can easily be raised from the acorns which are found scattered in abundance beneath the trees, in the months of September and October. I think when this tree becomes better known it will take the place of many other sorts now planted for shade and ornamental purposes.

The California Laurels also sends up shoots from the stump when the old tree is destroyed. Of this tree too much can not be said to encourage its propagation among husbandmen throughout the State. It is well known that the wood of no tree in the world takes a finer polish, and none that can be converted into more beautiful articles of cabinet work than this laurel. It is bound to become one of our most valuable forest trees.

This tree is also easily grown from the nut, which can be procured in any quantity from the old trees in the fall of the year.

The laurel flourishes best in moist places, though often seen on high ground. It is most frequently met with along the banks of all the perennial brooks of our State, where it rejoices in the fullness of its glory, its sweet, aromatic fragrance reminding us of its presence before we behold its glossy beauty.

CLEMILUS KAMP.

San Jose, Jan. 3, 1872.



PUBLISHED BY

DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)OFFICE, No. 338 Montgomery street, S. E. corner of
California street, where friends and patrons are invited to
our SCIENTIFIC PRESS, Patent Agency, Engraving and
Printing establishment.

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SAN FRANCISCO:

Saturday, Jan. 13, 1872.

Our Weekly Crop.

A good farmer should be mindful even of the most unimportant matters pertaining to his calling. Keeping this fact in mind we have determined to improve the character of our stock of poultry, and to that end have secured a fine pair of "White Leghorns," with which we propose to stock our poultry yard anew. With the view of carrying our ideas of improvement into other branches of small stock, our head farmer has prepared some interesting and suggestive data with regard to "The Wool Product" of the State. These arrangements having been completed, we take a few notes of "The Last Storm," in accomplishing which, we call to our aid "Notes of Travel in Alameda and Contra Costa," and "Our Healdsburg Correspondence." This done, we find leisure for a few reflections on the curious phenomena of "Meteors," and the "Progress of Mechanical Industry."

Returning to our farm we listen to some suggestions about the value of "Sea Kale" and "The Best Varieties of Grapes" for culture. We next pay a visit to "The Sacramento Farmers' Club," where we obtain many useful hints about growing Fruit and Shade Trees. Our general farm notes are very full, and include many interesting particulars of farm operations on "Sherman Island." Our "Useful Information" and "Good Health" notes are followed by some suggestions on "The Succession of Seasons;" preserving the "Unfermented Juice of the Grape" and the natural "Reproduction of Forest Trees."

Our lawgivers at Sacramento will find some important hints on "The No-Fence Law" proposition; while the more general reader will be interested in the description of "Elephant Hunting," a new and elegant addition which we have just hung up in our picture gallery.

The late bad weather has kept the members of the "Home Circle" in pretty close quarters during the week, but we find them making the most of the situation by having a lively discussion on the best means to improve their condition and add to the general happiness of the members; "The Way to Spoil Girls," and "Parental Folly" is freely discussed; the best mode to secure "Success in Life" is also considered, and many other things of interest to both old and young. Going into the kitchen we are told "How to make a Coal Fire," and how to render our "Boot Soles Water-Proof"—both very necessary items of information "about these days," as the old almanac makers used to say. With a few receipts for the housekeeper; Some practical "Mechanical Hints" and our usual column of "Life Thoughts," we bid our readers adieu for the week, hoping that the abundance of rain with which we have been blessed may be followed by the genial sunshine which is so necessary to properly utilize such generous pluvial favors.

WALNUT TREES.—It is said that during the first two years of our late civil war, 28,000 walnut trees were felled to supply one European factory with material for gunstocks!

The No-Fence Law.

There is, perhaps, no one subject upon which the press of the State is so universally agreed as that the present Legislature ought, in obedience to the will of the people, repeal all laws regulating the building of fences, and instead thereof, pass a general trespass law.

There are many reasons in favor of such legislation.

1st. Such legislation will be in accordance with the natural rights of property, or the law of Nature as applied to individual ownership. By this law whatever one man reduces to possession, no other man, either by himself, his servant, agent or active property has a right to disturb or destroy. To the point, if one man owns a piece of land with grain or any other crop upon it, no other man has the natural right to destroy or appropriate that crop either directly for his own use, or indirectly for the use and sustenance of his servant, agent or property.

And consequently, if any other man owns a band of cattle he is bound by all principles of right and equity to keep his cattle from his neighbor's grain for the simple reason that the cattle are aggressive, and if not restrained, will destroy the grain, while the grain itself is passive and cannot seek the grain to injure or destroy it.

2d. Such legislation would be in accordance with the great fundamental principle that should be the foundation of all good governments—"the greatest good to the greatest number." It may not be necessary for us here to produce any argument to prove the correctness of this proposition, yet it may be well, at this time, to put on record some facts bearing on the question as a convenient reference for those who are called upon by legislative action to change a long settled policy of the State touching her most valuable and important industries—those industries upon which her present prosperity rests and her future prosperity depends.

Unjust Taxation.

We have before us the report of the State Surveyor-General for the years 1870 and 1871, and from a tabulated statement of the returns of the County assessors we find the whole agricultural products of the State for 1870, including grains of all kinds, roots and wine, excluding fruits and berries, to be in round numbers, equal in money values to \$60,000,000. The value of the first crop is not estimated because the quantity produced is not returned, but as by the present laws the orchards and vineyards are required to be fenced by their owners, to protect them from destruction by stock, it is but fair that they should be brought into our reckoning. We find the total number of fruit trees in the State to be 30,910,046. If we set these down at the nominal value of one dollar each, which is nothing like half and not even a quarter of their real present value—we have in round numbers \$40,000,000. This makes the aggregate value of the growing crops and fruit trees of the State, to protect which fences have to be built and maintained by their owners—\$100,000,000.

Now taking the whole number of horses, cattle, sheep, and goats in the State as stated by the same reports and reckoning their value by their present market prices and we have in round numbers \$30,000,000, or less than one-third the value of the other agricultural products.

Taking these values into consideration, and according to the ordinary rules or equities as applied to the rights of property, it may well be asked, if it is right or equitable that the owners of the \$100,000,000 worth of property should be compelled to pay the expense of herding the \$30,000,000 worth of cattle, or in other words of fencing their their own property to protect it from the ravages of the cattle—which are but the servants in one sense—the aggressive property of other owners.

In all associations of property as such, for the mutual benefit and interest of its owners—incorporated companies, for instance,—the greater number of shares, or the greater value controls the lesser, and claims and exercises the right of managing the whole in the interest of the greater number of shares, and no one ever questions the correctness of this business rule.

Why should not the same rule be enforced by the State, which so far as the management of the property of its citizens is concerned, is but an extensive corporation formed for the

purpose of enforcing the rights of property?

Cost of Fences.

According to the report we are taking as authority, the number of acres under fence in the State, is 4,982,942. This fence has not cost less than three dollars per acre for every acre enclosed—or a sum of \$14,946,826—a trifle less than half the value of all the stock in the State! The annual interest on this sum at one and one fourth per cent. per month is \$2,042,023. The annual expense for repairs and the depreciation of the fences beyond the probability of repair in our destructive and flooding country can hardly be less than twenty per cent. on the original cost—a sum equal to \$2,989,365, making an annual tax on the agricultural industries of the State of \$5,031,388 to keep up the fences. If this tax was laid exclusively on the stock, for whose benefit, under the present system, it is made necessary, it would be an annual tax of nearly seventeen per cent. and would effectually cripple that important industry in the State. The stock owners would then be the first and loudest in demanding the abandonment of a custom at once so expensive and so unnecessary. Is it any less expensive or unnecessary because the other industries are compelled to bear its burdens?

It is really a burden to the other industries of over five per cent. per annum, and to them is so much actual loss.

Scarcity of Timber.

One of the greatest drawbacks to our State is the great scarcity and high price of timber, lumber and wood with which to carry on the necessary internal improvements—constructing wharves, bridges, railroads, etc., building houses and barns, and supplying the necessary wood for domestic and manufacturing purposes. In view of these facts alone, the plainest principles of political economy would dictate such legislation as will dispense with all unnecessary use, and destruction of this timber, lumber and wood, and no better place can be found to commence this legislation than upon this fence question. Dispensing with the unnecessary use and destruction of the timber of the State is equivalent to stimulating its production. While we consider the latter among the most important and necessary objects for the action of the Legislature, and invoke for it a careful investigation and effective action, the former is its twin sister and none the less important and necessary.

Early Action Important.

From all the indications upon which men may base their calculations for the future, the coming season bids fair to be one of the most favorable to the agricultural interests of the State ever known.

Let the action of the Legislature upon this subject be prompt and effectual and it will add millions to the wealth of the country by stimulating the energies of our farmers in the production, rather than in the unnecessary protection of their crops. Now that so much of the fences have been swept away by the floods, the time is most opportune to sweep away all laws that would, if they remain in force, compel the rebuilding of these fences at great and unnecessary expense.

Our Tule Land Levees.

A difference of opinion exists in regard to the stability of the levees now finished or in course of construction around the delta islands of the Sacramento and San Joaquin rivers. Of course everything depends upon the height and strength of such levees; mere height, without sufficient width of both base and top, will not afford the security desired. Nor under certain circumstances will both of these suffice.

Unless these levees are secured against impinging waters, caused by the natural, rapid flow of the rivers, or the washings of the waves from passing steamers, their endurance is yet problematical. At the present season of high water the rivers are more than bank full, with the backing up of the tides, the steamer wave passing freely over that portion of land between the river bank and levee is doing considerable damage to a portion of the levee on the east of Grand Island by washing away its base.

This might be almost entirely prevented by setting out and growing a thick copse of willows on the strip of land between the river bank and the levee. If more land was given to such border by building the levee further back from the river, it would afford far greater security, at the same time that the land could be made to pay a good per cent. upon its value, in

the simple production of willows or other woods for fuel. If the yellow or golden willow of the Eastern States is not already introduced here, it should be at once, being the most valuable willow for river bank protection in the world.

Curing Olives.

EDITORS PRESS:—Can you inform me of a process by which the bitterness common to olives can be extracted. I have punctured the fruit and thus extracted the bitter with the aid of a weak lye, and have succeeded in making a good pickled olive. My process is slow and expensive, besides, breaking the skin should be avoided if possible.

My orchard of 400 trees bears freely this season, and should with proper management be a source of profit.

M. G. E.

Mission, San Jose, Dec. 20, 1871.

We know of no other way for preserving olives than by first soaking them in a weak lye and then placing them in a salt pickle. In the localities whence the chief supply of olives is derived, the general practice is to gather the fruit before it is quite ripe, and place it in a weak lye made with one part of quicklime to six of ashes. The ashes should be of the best quality, and are better if made from young, hard wood, and carefully sifted before being placed in the leach-tub. The fruit, immediately after being gathered, is placed in the lye so made, where it should remain from 6 to 8 hours. After being removed from this bath it should be thoroughly washed with fresh water. We are not aware that the fruit is punctured before being put into the lye, which, as our correspondent suggests, is a tedious operation, especially if performed by hand, after being thoroughly washed, the fruit is placed in a brine of common salt, to which some aromatic ingredient is added. After remaining in this pickle for a short time it is ready for the table or market. We will endeavor at an early day, to make a more extended reference to the cultivation of the olive for its oil.

Second-Growth Pears.

We have received from Mrs. Rev. Wm. Taylor, of Alameda, a pear of the second growth or crop of the season; also an account of the blossoming of cherry and apple trees in November last. This inclination to a second growth is not uncommon to California, and doubtless is the resulting effect of our peculiar climate upon many of the introduced fruits and trees of other climes, whilst native fruits and plants seldom present this anomaly. In almost every case of the kind it seems to follow a season of prolonged warmth, attended with ample moisture about the roots of the tree or plant.

Excessive irrigation under a warm sunshine is another cause and a potent one; but under no circumstances is it desirable, as it tends to bring out the fruit-bearing energies of the tree or plant at a season when it is next to impossible that it can perfect its fruit; the effort, therefore, is simply exhaustive and injurious, and nothing should be done to promote it. The pear presented us, is a singularly interesting specimen of what Nature sometimes does, when it attempts to do a little more than it well can, and do it justice.

That Dry Season.

Our Turlock correspondent "J. A. W.," in answer to "New Subscriber," in our issue of Dec. 16th, says:—"He makes out one of the dry years 1856-7, it was 1855-6." I do not receive the correction. Following Dr. Logan's rain table as a guide, and in the sense in which the term *dry year* was used in the discussion, I contend that 1856-7 was a dry year. And yet I can see how "New Subscriber" was right in his intention.

We should remember the expression *dry year* may be used in two senses. It may allude to the amount of rain through the season, or to the effect produced by a bad distribution of rains, that is, light crops.

In the discussion, I used it in the former sense, while "New Subscriber" probably alluded to its latter.

Vick's FLORAL GUIDE for 1872 has been received. The present number is even more elegantly printed than any of its predecessors. It is printed on tinted paper, of two colors, and illustrated with some 300 engravings of flowers, vegetables, etc., including two beautifully colored plates. These annual publications form exceedingly beautiful and instructive catalogues and floral guides, giving minute direction for cultivating flowers and vegetables, ornamenting grounds, laying out and preparing walks, etc. It comprises a small octavo of 112 pages, and is forwarded by mail to any one enclosing 10 cts., of currency—worth a dollar. Address, James Vick, Rochester, N. Y.

Elephant Hunting.

In this country when we wish to hunt for large game, the buffalo is supposed to fill the requirement; but in this respect African hunters have the advantage of us by being able to make an expedition against that giant of the forest, the elephant. Many of our readers have no doubt seen this huge beast in a menagerie or a circus, where they are tame and docile and trained to perform various tricks; but all this is quite a different thing from meeting one in his native wilds, especially if in the situation of the man shown in our illustration; who, in addition to the danger from the proximity of the evidently enraged animal, has a baulky or frightened horse, which just at a critical moment, refuses to stir.

The elephant, even in a wild state, is one of the most wary of animals; in strength the mammoth of modern days, and most averse to human intrusion in habit. It is a reflecting, contemplative animal with strongly developed tastes for solitude and peace. When they are wounded or cornered, however, they charge their assailants with great fury, and the approach and attack requires considerable courage and presence of mind. When the hunters find an elephant they approach very carefully, and observe certain precautionary rules which only experience in the habits of the animal would cause to be followed. For instance, Du Chaillu informs us that the natives say you must never approach an elephant but from behind, as he cannot turn very fast, and you have time to escape after firing. Great care must also be taken that the vines which are so fatal to the elephant do not also catch the hunters. When they charge, the person who wears bright clothing will be likely to get more than his share of the fun, unless in a place of safety.

The natives of Africa hunt them in several ways. The forests in some places are full of strong climbing plants, running to the tops of the trees, and the natives twist and weave them together ingeniously in such a manner as to make a huge fence or obstruction not sufficient to hold the elephant, but quite strong enough to check him in his flight and entangle him in the meshes till the hunters can have time to kill him. Once caught they surround him and put an end to his existence by discharges of spears, etc. The first motion of the animal on seeing an enemy is flight. He rushes ahead blindly, but is brought up by the barriers of vines, which enrage and terrifies him, and he tears up everything within reach, but in vain; for the tough vines, nowhere fastened, give way to his blows, and the more he labors the more closely he is held.

Another plan is to construct a *nghal* or inclosure, surrounded by a low fence, which, however, is sufficient to keep the elephants within, for even when enraged by a wound they hesitate to charge an assailant across an intervening ridge, but will hurry along to seek an opening. They are entrapped or driven into this inclosure and then caught. It seems strange that so intelligent an animal, with the utmost calmness, walk into this trap and remain confined within a fence not strong enough to resist a calf; but it is nevertheless true.

PACIFIC JOURNAL OF HEALTH.—This excellent magazine published by Carrie T. & Wm. J. Young, and known as the "Woman's Pacific Coast Journal," heretofore, comes to us with a change of name, and an addition of a beautifully illustrated cover, designed and engraved by ladies. The *Journal* is a sensible paper and should be read in every family; its original articles are evidently above the average of newspaper articles. Only \$1.50 a year is cheap enough for a publication like the *Journal*.

THE FIVE PER-CENT. LAW.—In the Senate, Jan. 9th, the bill to repeal this obnoxious law came up, and without debate was passed by the following vote: Ayes, 30; Noes, 7. Senator Duffy gave notice that he should move for a reconsideration, but it will be quite useless. The voice of the people through the press, has removed the odious law from our statutes.

Sorghum or Chinese Sugar Cane.

This sugar yielding plant which in many sections of the "great west," has become a positive staple product, does not seem to meet with as much favor with California culturists.

In what are termed the Western States—according to agricultural reports—millions of gallons of very good syrup for family use are annually made from sorghum, and the sugar product from the same source is very considerable.

But in California where similar attempts have been made, with all the advantages of climate supposed to be in our favor, nothing worth noting has resulted from it, if we except perhaps San Bernardino valley.

In the middle and south of France, with a climate in some respects similar to ours, it is one of the most valuable of their annual field crops, as a sugar yielding and forage plant. There they find no difficulty in making an excellent sugar as well as syrup from it. But their way of arriving at a successful result in

thus rendering it extremely liable to be injured by early autumnal frosts, which, if they do occur before the sorghum is fully ripe, greatly injures and reduces the quantity of sugar.

Hints to Experimenters.

There are, however, many localities, perhaps more elevated than the lower valleys, where the season is more marked by change from summer to autumn, where the plant would conform to the climate in its growth, and ripen sufficiently before frost.

If such can be found within the borders of our State anywhere, by making it a subject of experiment for two or three years, and then if proving successful, there is probably no other branch of agricultural industry that would pay better, at the same time that it presents a diversity of pursuit to the farmer, in itself a guaranty of increased thrift.

We learn that in the vicinity of Los Angeles, the sorghum not only ripens its cane beautifully, but yields abundantly, considered either in respect to its juice, or fodder for cattle and

Beet Sugar Production.

The Commissioner of Agriculture in his late Annual Report, speaks favorably of the condition of the Beet Sugar industry of the United States. He says that, after a series of preliminary disappointments and failures, such as embarrass almost every improvement, the economic difficulties of the beet sugar industry seem to have been "measurably overcome." He says that

Three Establishments are Manufacturing

A good quality of sugar, with sufficient success to render future efforts promising, viz: One at Chatsworth Ill.; one at Alvarado, Cal.; and the third in Sauk City, Wis. Other enterprises have been projected. At Chatsworth, in 1866, 4,000 tons of beets were raised on 400 acres, at an estimated cost of \$4 per ton. Since that time the cost has been reduced by the introduction of machinery to \$2.70 per ton. The seed used is the "White Imperial." In order to decrease the size of the beets the seed is sown very thickly; the beets do not by this means exceed one and a half or two pounds each, and a greater percentage of sugar is the rebey obtained from them.

"On the Pacific Coast,"

Says the Commissioner, "great confidence is felt in the final success of the beet-sugar industry." He describes its use and progress in California, and the mode of manufacture. He says:—"The difficulties that embarrass the enterprise seem to be in the beet culture of the neighborhood, and in the low percentage of sugar secured. The experience of the proprietors leads them to conclusions very different from those of European beet-growers. The latter obtain the maximum of saccharine matter in the latest growth prior to autumnal frosts. The beets grown here lost half their sugar during the last six weeks of their growth. Perhaps in the adjustment of this difficultly the beet culture here may find its final opening to success."

In Colorado

Sugar-beet culture has been commenced with very promising results. Says the Commissioner: "Reports of enormous yields are received, two cultivators having secured over seventy tons per acre. Farmers were sanguine as to their ability to raise an average of forty tons. Their quality is now being tested at Chatsworth. Efforts are being made to establish a factory in Colorado."

The Value of the Industry

May be partially inferred from the enormous importations of foreign sugar, which for the year ending, June 30th, 1870, amounted to 580,330 tons raw sugar; 75 tons refined; 18,080 tons sugar cane syrup; 56,374,547 gallons of molasses and 55,820 pounds of confectionery. The total value of these imports was \$69,827,884. The value of our domestic sugars—cane, maple and sorghum did not reach one-eighth of this amount.

Our beet sugar interest starts in under peculiarly favorable circumstances. The great sugar producing regions of the world are mostly in a rudimentary or disorganized condition. The Rebellion in Cuba has desolated the finest portions of that Island, and totally destroyed a large number of the plantations, and the emancipated labor still works to disadvantage in our own cane-producing districts. Into this breach, then, the beet-sugar industry of the United States should at once be thrown, and the best use be made out of its excellent opportunity.

MAMMOTH CUCUMBER.—The mammoth Chinese Cucumber, six feet long and nine and one-half inches in circumference, exhibited at the Montana Fair and recently illustrated by us was raised by D. W. Curtiss, one of the most enterprising seedsmen of Helena, M. T. These cucumbers, it is claimed, are much superior to the ordinary variety in quality, as well as in size, and make an excellent pickle. Those of our readers who so desire can procure seeds of this remarkable production, by addressing Mr. Curtiss, as per advertisement.



ELEPHANT HUNTING.

sorghum sugar making is so different from ours, as to plainly indicate the reason of both their success and our failure.

Probable Cause of Failure Here.

Here, it would seem, everybody supposes that by boiling down the sorghum juice in open pans over a slow fire, with constant skimming, they ought to make good sugar. In France no one supposes any such thing; because right before their eyes they see in every beet sugar factory the necessity not only of a complete defecation and filtration of the beet juices before boiling, but the still greater necessity of concentrating the juice to the consistency of syrup and eventually to sugar, as rapidly as possible,—not in open pans or boilers, but in the best constructed vacuum pans, where the evaporation can be carried on under a much lower pressure than the natural atmosphere, requiring therefore far less heat, and consequently with no fear of burning.

Applying the same principle to the concentration of their sorghum juices, they obtain equally good and certain results, as with beet juice; and why not? In California where open air evaporation has so signally failed, may we not too, by taking a look into our beet sugar factories, and seeing the necessity of a different method of procedure, profit by their introduction here, and then, being governed by the right principle, yet find that sugar can be made here from sorghum, of excellent quality and at a large profit over cost?

It has been said that the habit of growth of the sorghum in California is widely different from that in France or the Eastern States, inasmuch as that here, the stalks seem never to fully mature; but keep on growing in the fall of the year, long after it has attained sufficient size;

other animals, or for seed, of which fowls eat with avidity.

Who will give it a further trial? Perhaps some one in the vicinity of one of our beet sugar factories, where the aid of a vacuum pan can be secured at trifling cost, will make the experiment another year and report the result.

Sacramento Red Lands for Vineyards.

There is a description of lands in Sacramento county, that though decidedly of the low valley stamp, are, nevertheless, excellent vineyard lands. They are known as the red lands, because the prevailing soil of the district to a considerable depth from the surface is of this color. These lands lie in a southeasterly direction from the city of Sacramento, commencing within one mile of the city and extending nearly to the limit of the county in the direction named. They seem to possess all the good qualities of the foothill lands for giving high flavor to their product, with the advantage of a longer season of growth to the vine, which not only secures early maturity for table grapes but greatly prolongs the season of the vintage.

In the production of grapes for raisins, these lands are admirably situated, bringing early maturity, a highly concentrated saccharine quality, and in a warm, drying atmosphere in which the grape never mildews, and with almost perfect immunity from early autumn frosts. Add to these advantages, that of easy and cheap transportation to market, and it will be difficult to find better lands, even among the foothills, for general vineyard purposes.

An unusually long Editorial on Sherman Island will be found on page 22.



The Way To Spoil Girls.

Be always telling her, from her earliest childhood, what a beautiful creature she is. It is a capital way of inflating the vanity of a little girl, to be constantly exclaiming, "How pretty!" Children understand such flattery even when in the nurse's arms, and the evil is done to the character in its earliest formation.

Begin, as soon as she can toddle, to dress her out in fashionable clothes and rich dresses. Put a hoop upon her at once, with all the artificial adornment of flounces and feathers and curls. Fondness for dress will thus become a prominent characteristic, and will usurp the whole attention of the young mortal, and be a long step towards spoiling her.

Let her visit so much that she finds no happiness at home, and therefore will not be apt to stay there and learn home duties. It is a capital thing for a spoiled daughter to seek all her happiness in visiting and change of place and associates. She will thus grow as useful as modern parents desire that their daughters should.

Be sure that her education gives her a smattering of all the accomplishments, without the slightest knowledge of the things really useful in life. If her mind and time are occupied in modern accomplishments, there will be no thought of the necessity and virtue of being of some real use to somebody pervading her heart, and she will soon be ready as a spoiled daughter.

As a consequence, keep her in profound ignorance of all the useful arts of house-keeping, impressing on her mind it is vulgar to do anything for herself, or learn how anything is done. A spoiled daughter should never be taught the mysteries of the kitchen; such things a lady always leaves to the servants. It would be vulgar for her to know how to dress a salad or make a pudding.

To complete the happiness of your spoiled daughter, marry her to a bearded youth with soft hands, who knows as little how to earn money as she does to save it. Her happiness will then be finished for her lifetime.—*Pioneer*.

Parental Folly.

To compel a child to eat an article of food for which he has no appetite, nay, may have a positive disgust at the very thought of swallowing the hated mouthful. Parents do this from the very best of motives, thinking that it would add to their children's health or comfort in after life to have learned to eat the article in question. It is just as great an outrage to compel a man to eat a piece of fried snake as to compel a child to eat a piece of fat meat when its stomach revolts against it; the inhumanity of it is greater, because the child, unresisting and helpless, is made to comply by the one he loves best in the world.

The instincts of childhood should be held, in a measure, sacred to them; and it may be safe to say what Nature craves, the body has use for; what Nature abhors, the same body has no use for. Every man is at liberty to ride any hobby to death he chooses; if he wants to ride it to his own undoing, he may have the right to do it, with some restrictions; but to "have a theory," and kill his child in the attempt to carry it out, to make it practical, is not to be applauded.

If a man wishes to teach his child to relish any article of food which he does not like now, a safe method of bringing it about is to take a long walk or ride, far from any human habitation, and after the child has been some time complaining of being hungry, present the article in question to him, and let him taste it if he will, and in a little while taste it again; in this way he may be taught to love it in a very short time. The conclusion of the whole matter is this: to compel the swallowing of a mouthful of food against the appetite or inclination for it, is certainly a wicked waste of that much; it gives no healthful nourishment to the body, is a violence to nature, a shock to the system, and invites loathsomeness, painful, and even fatal maladies.

DISCRETION is the perfection of reason.

Tell Your Wife.

If you are in trouble, or a quondary tell your wife, that is you have one, all about it at once. Ten to one her invention will solve your difficulty sooner than all your logic. The wit of a woman has been praised, but her instincts are quicker and keener than her reason. Counsel with your wife, or mother, or sister, and be assured light will flash upon your darkness. Women are too commonly adjudged as verdant in all but purely womanly affairs. No philosophical student of the sex thus judges them. Their intuitions or insights, are subtle, and if they cannot see a cat in the meal there is no cat there. In counseling a man to tell his trouble to his wife, we would go further and advise him to keep none of his affairs secret from her. Many a home has been happily saved and many a fortune retrieved, by man's full confidence in his "better half." Woman is far more a seer and prophet than man, if she have a fair chance. As a general rule, wives confide the minutest of their plans and thoughts to their husbands, having no involvements to screen from them. Why not reciprocate, if but for the pleasure of meeting confidence with confidence? We are certain that no man succeeds so well in the world as he who, taking a partner for life, makes her the partner for all his purposes and hopes. What is wrong of his impulse or judgment, she will check and set right with her almost universally right instincts. "Helpmeet" was no insignificant title as applied to man's companion. She is a meet help to him in every darkness, difficulty and sorrow of life. And what she most craves and deserves, is confidence—without which love is never free from shadow.—*Journal of the Farm*.

What is in the Bedroom.

If two persons are to occupy a bedroom during the night, let them step on a weighing scale as they retire, and then again in the morning, and they will find their actual weight is at least a pound less in the morning. Frequently there will be a loss of two or more pounds, and the average loss throughout the year will be a pound of matter, which has gone off from their bodies, partly from the lungs, and partly through the pores of the skin. The escaped material is carbonic acid, and decayed animal matter or poisonous exhalation. This is diffused through the air in part, and part absorbed by the bed-clothes. If a single ounce of wool or cotton be burned in a room, it will so completely saturate the air with smoke that one can hardly breathe, though there can only be one ounce of foreign matter in the air. If an ounce of cotton be burned every hour during the night, the air will be kept continually saturated with smoke unless there be an open window or door for it to escape. Now the sixteen ounces of smoke thus formed is far less poisonous than the sixteen of exhalations from the lungs and bodies of two persons who have lost a pound in weight during the eight hours of sleeping; for while the dry smoke is mainly taken into the lungs the damp odors from the body are absorbed both in the lungs and into the pores of the whole body. Need more be said to show the importance of having bedrooms well ventilated and of thoroughly airing the sheets, coverlets, and mattresses in the morning, before packing them in the form of a neatly-made bed?

DOMESTIC LIFE.—He cannot be an unhappy man who has the love and smiles of a woman to accompany him in every department of life. The world may look dark and cheerless without—enemies may gather in his path—but when he returns to the fireside and feels the tender love of woman, he forgets his cares and his troubles, and is comparatively a happy man. He is but half prepared for his journey of life who takes not with him, to soothe and comfort him, that friend who will forsake him in no emergency—who will divide his sorrows—increase his joys—lift the veil from his heart and throw sunshine amid the darkest scenes. No man cannot be miserable who has a companion, be he ever so poor, despised and trodden upon by the world.

It is at home that every man must be known by those who would make a just estimate either of his virtue or his felicity; for smiles and embroidery are alike occasional, and the mind is often dressed for show in painted honor and fictitious benevolence.

MEN of great qualities do not always succeed in life.

Success in Life.

The great evil upon which we have fallen in these days of rapid fortunes and extravagant living will be appreciated if we ask ourselves what meaning is attached to the word success. What are our young people taught as compassing true success in life? What class of men are held up as the true type of manhood, and as worthy of emulation? When Mr. Greeley talks of "self-made men," who are the bright examples he holds up to view, and whom he asks our young men to pattern after—the men of ideas, of moral power, of strong virtues, or of great wealth? What is meant by success in life when the instances most cited in this connection are Astor, Girard, Stewart, and Vanderbilt? Whoever speaks of men like Elihu Burritt and that class of pure philanthropists and scholars, who are constantly thinking so much of others, that they have no time to devote to the accumulation of wealth.

While we laud to the skies such men as Peabody, who having lived within himself until he had amassed great wealth, and got through with its use and aggrandizement, bequeathed it to such purposes and under such restrictions as suited his fancy or his ambition, we are quite apt to lose sight of the thousands of tender hearts and great souls whose wonderful benevolence and fellow feeling have made it impossible that they should grow rich save in the blessings of those whom they have helped. Is it not time that a new lexicon was prepared, or the old ones amended, so that our "coming" men and women shall have a different idea of the true meaning of success?

EXTRAVAGANCE OF WOMEN.—How much is said and written upon this subject! Now pause a moment, my dear masculine friends, and let us compare notes. To be sure, we sometimes wear diamonds, but, my dear sir, this "single stone" and that rich "cluster," with its opal center, tinted and rainbow-hued, costs not half so much as the regal *solitaire* sparkling upon your little finger! Our ribbons and laces, which look such a prodigious pile to your unfeminine eyes, could easily be bought with the money thrown away on your cigar-stumps! Our darling bonnets, though grown so liliputian of late, we admit cost a trifle, but so do all those luxuries over the way, where we poor souls never care nor dare to enter. Our silks and satins cost less than your broadcloth, while our boots (dear, dainty little things) are scarce half the price of your own. Now, saying nothing of your clubs, and the secret association to which you belong, in what are not all the superfluities of our sex overbalanced by those of your own? Where are they? MRS. WILKINSON.

WOMEN IN ENGLAND.—A lady, in a recent letter from Liverpool, says: "Here, as in every other hotel in England, I found ladies at the bar keeping the register of arrivals and assigning rooms to guests, receiving payment of bills, etc. So in the telegraph office, and in all the stores and shops, young and well-dressed ladies form a large portion of the attendance. I was greatly struck with it, and believe it would be well for our people to adopt the custom of thus furnishing employment to a large and most dependent class of our people. Wherever there is light and nimble work to be done we found universally ladies employed. In the extensive draper establishment of Lee, in Liverpool, frequented and patronized by the nobility and wealthy of the land, the long lines of counters were attended by scores of beautiful young girls, tastefully dressed, and who were waiting upon the crowds of ladies and gentlemen purchasing supplies.

OBEEDIENCE IN CHILDREN.—It is unspeakable what a blessing it is to a child, what a saving of unhappiness and wickedness in after life, to be early taught absolute obedience; there must be no hesitating or asking why, but what a mother says must at once be done. The young twig bends easily, but remember that, in after years, it grows hard, and you will break before you can bend it. A little steadiness at first will save you many years' sorrow. While you insist upon obedience, however, you must take care that you do not provoke a child and tempt it to disobedience, by unreasonable and foolish commands. "Provoke not your children to wrath," and when it is necessary to punish them, see that it never be done violently and in a passion, but a duty.

MRS. H. B. STOWE has turned artist, and has presented a picture painted by herself to the Boston Fair for dumb animals.

Young Folks' Column.

A Spider Story.

In 1830, at Newcastle-on-Tyne, England, a gentleman boasted to a friend that he could introduce to him an engineer of more wonderful skill than Robert Stephenson, who had just made himself famous by perfecting the railway locomotive. In fulfilment of the boast, he brought out a glass tumbler containing a little scarlet-colored spider, whose beauty, with its bright yellow nest on a sprig of laurestinus, had induced a young lady to pluck it from the bush where it was growing. When brought into the house, it was placed on the mantle-piece, and secured by placing a glass over it.

In a very short time, this wonderful little engineer contrived to accomplish the herculean task of raising the sprig of laurestinus, a weight several hundred times greater than itself; to the upper part of the glass, and attaching it there so firmly that, after forty years, it still suspended where it was hung by the spider.

In the Bible we read: "The spider layeth hold with her hands, and is in kings' palaces;" but in his glass prison there was nothing for it to lay hold of—no peg, or nail, or beam, on which to fasten its threads. Yet, in a short time the little insect had accomplished its task.

It is believed that this kind of spider always deposits its nest upon trees, and never upon the ground; and this may account for its wonderful effort to raise the branch to the upper part of the glass.

It may still be seen, dead and dry, hanging by one of its threads from the top of its prison house, with its little nest upon a leaf of the laurestinus.

Boys, boys, if you look into the early life of truly helpful men, those who make life easier and nobler to those who come after them, you will almost invariably find that they lived *purely in the days of their youth*. In early life, the brain, though abounding in vigor, is sensitive and very susceptible to injury—and this to such a degree that a comparatively brief and moderate indulgence in vicious pleasures appears to lower the tone and impair both the delicacy and efficiency of the brain for life. This is simply the truth of science. Poor memory, absent-mindedness, lack of application, indolence, shiftlessness, and a hundred other symptoms, indicate "bad habits." Oh, the beauty and benefit of purity! Oh, the foulness and calamity of vicious indulgences!

BOYS, DO YOUR BEST.—If you are running along in a hurry, and tumble over a brickbat and spill your dinner, all right. Kick the brickbat out of the way, pick up your dinner-pail, save your bread and butter if you can; if not, whistle "Hail Columbia," and run to school. It won't do to be put down by a brickbat. Take hold of a book as a squirrel takes hold of a hickory-nut. Be bound to get the meat out if there is any in it. Because Tom Lazylops wants to be a fool, it is no reason why you should be one. Do your best every time, and when the teacher calls out the classes, you can walk up like a man and tell him to go ahead.

CHILD LIFE.—Every hour that a child lives a quiet, tranquil, joyous life, of such sort as kittens live on hearths, squirrels in sunshine, is just so much investment in strength and steadiness, and growth of the nervous system. Every hour that a child lives a life of excited brain-working, either in a school-room or in a ball-room, is just so much taken away from the reserved force which enables nerves to triumph through the sorrows, through the labors, through the diseases of latter life.

A little five-year old boy was being instructed in morals by his grandmother. The old lady told him that all such terms as "by golly," "by jingo," etc. were only little oaths, and but little better than other profanities. In fact, she said, she could tell a profane oath by the prefix "by." All such were oaths. "Well, then, grandmother, said the little hopeful, is 'by telegraph,' which I see in the newspapers, swearing?" "No," said the old lady, "that's only lying."

QUESTIONS IN ARITHMETIC.—If twenty grains will make a scruple, how many will make a doubt?

If seven days make one week, how many will make one strong?

If three miles make a league, how many will make a confederacy.

ANSWER TO LAST WEEK'S CHARADE.—Newton Booth.

DOMESTIC ECONOMY.

How to Make a Coal Fire.

The art of making and maintaining a coal fire properly is possessed by but few. We believe that there would be a sensible diminution in the number of domestic quarrels and soured tempers, if a knowledge of it were more general. Husbands would not have to growl and scold over so many late dinners, nor wives fret themselves to skin and bone over obstinate fires that will neither bake, roast, nor boil.

There are many faults in the usual construction of a coal fire. A common fault is to use too coarse wood for kindling, and too much of it. This, while it generally succeeds in lighting the coal, leaves a bed of ashes below the coal which interferes with the draft unless raked out. The wood should be of some rapidly burning variety which gives a quick and high heat, and should be split fine. It should be so placed that the coal will remain on the top of it and not fall through to the grate, leaving the kindling on the top of any part of the coal. A good rule, where stoves or furnaces have a good draft, is to use coal as small as can be used without inconvenience from its sifting too freely through the grate.

Grates should have their bars closely set for stoves that are cleaned out daily, and have fires lighted in them each morning, while those which are intended to have fires kept in them continuously for days and weeks will not admit of fine grates, on account of the accumulation of ashes and small "clinkers."

There is much difference in coal in regard to the formation of clinkers. These are nothing but vitrified, or partially vitrified earthy matters, and only can form when a high heat is maintained; they are apt to be troublesome when there is too great a draft. A coal stove or furnace should, therefore, be so constructed that its draft can be perfectly controlled. The bottom draft should admit of being closed air-tight, as nearly as is possible to make it, and there ought always be provision made for a top draft. If, however, the draft of a chimney should be so strong that air in too great quantities is drawn in at the bottom when the dampers are closed, a damper in the pipe, which will close it partially, must be employed, though in sluggish chimneys such a damper is apt to force the gases of combustion into the room, and therefore it ought always to be avoided when possible.

The practice of putting ashes on the top of a fire to keep it, is very productive of clinkers, although it answers very well in other respects. Damp coal screenings are better, and may be economically burned in this manner. If a coal fire gets very low, the quickest way to extinguish it is to rake it at the bottom. To preserve a fire under such circumstances, a little coal should be placed on the fire, and when it has caught, more may be added, and the raking deferred until it has got well ignited. When the fire bricks have become burdened with clinkers which have fused and adhered, they may be cleaned by throwing oyster or clam shells into the fire box when the fire is very hot, and allowing the fire to go out. The clinkers will generally cleave off without the use of much force the next morning. From two quarts to one-half a peck will be sufficient for most stoves, and the operation can be repeated if some of the clinkers still adhere.

Water-Proof Boot Soles.

If hot tar is applied to boot soles, it will make them water-proof. Let it be as hot as leather will bear without injury, applied with a swab, and drying in the fire. The operation may be repeated two or three times during the winter, if necessary. It makes the surface of the leather quite hard, so that it wears longer, as well as keeps the water out. It is a good plan to provide boots for winter during the summer, and prepare the soles by tarring, as they will then become, before they are wanted to wear, almost as firm as horn, and wear twice as long as those unprepared.

Ten years ago, says a correspondent of the *Country Gentleman*, I met with a direction similar to the above, and with some hesitation I concluded to have it tried on the soles of a pair of field boots. By a piece of supererogation, a pair of thin-soled morocco boots was tarred with the others, the soles being saturated and the seaming too, all round, including the lower rim of the morocco all round the

soles. As these boots are doing service yet, and have been much used every summer during the ten years, I mention the fact because it furnishes what I then wished for, namely, a proof that the tar would not burn or otherwise hurt the leather. The soles remain like horn, and have never required any repair, and even the thin upper apparently cracked in all directions from the first, has never torn but a little on one boot, at the bead on the outer side of the foot. It has been oiled but once each summer, but the soles received only the one thorough tarring. Boot soles will take the tar best after having the grain worn off slightly. It soon dries in, if exposed to the sun, and the odor, even of gas tar, is quickly overcome by the all conquering effects of dry earth. A short walk over a fallow field will remove it completely, and make it entirely unnecessary to imitate the eastern custom of taking off the boots at the house entrance, unless there be some other reason for it than fresh tarred soles.

OUT DOOR CELLAR.—In the first place, select the most elevated spot of ground conveniently near to your dwelling house and throw out the dirt to the depth of two feet. Build a double brick wall at the base of the excavation, leaving a vacant space of six inches, between the walls, which should be tied at the corners and several places in the sides, being careful, however, to leave vacant places for vent holes, to admit a free circulation of air throughout the length and breadth of the walls. The height of the walls when completed, nine feet from base to top. The surplus dirt, banked up, on outside four feet in height. Floor overhead, two thicknesses of well seasoned, matched flooring, and cover the whole with good shingles; construct a flue extending upwards and at the top of the building, to allow impure air to escape. A drain should be constructed by which any water which might penetrate, would run off. Of course a proper floor should be constructed for the cellar.

A correspondent of the *Prairie Farmer* says he has used such cellars for upwards of twelve years and ever found them sure depositories for fruits and vegetables in winter, and for milk, butter, etc., in summer.

LEMON JELLY.—A correspondent of the *Country Gentleman* communicates the following:—To make two quarts of jelly; Take a package, which is two ounces, of gelatine, 1½ lbs. of sugar, the juice of five lemons, some orange peel or stick cinnamon, or other flavoring if you wish it, and soak all together for an hour in a pint of cold water; add to this, after the gelatine is thoroughly soaked, three pints of boiling water, and stir until it is all dissolved, and then strain through a fine strainer. It is better to make the jelly the day before it is to be used, and in warm weather use a little less water.

Be sure that the gelatine is perfectly soaked before pouring on the boiling water, even though it should take a longer time than above stated.

MAKING CIDER VINEGAR.—A. Tufts, Centralia, Marion County, Illinois, writes to the American Farmers' Club as follows: One year ago last October I made a barrel of cider, put a bottle in the bung-hole, and placed it on the south side of a building exposed to the sun. In a week I drew it off very slowly (to expose it to the atmosphere) into tubs, let it remain four hours, and returned it to the barrel. Ten days after, I repeated the process, and when it was seven weeks old I sold it to a grocer for good vinegar, and it was good, an article very seldom to be bought at the groceries. I did the same thing several times before with the same success.

BITTER MILK.—Cream, by standing long, is apt to become bitter. This is especially the case when it is accumulated from day to day, the quantity being small. It rarely occurs when there is an abundance of milk, and churning is resorted to every day. If it does occur it may be in the feed. There are many bitter weeds, that doubtless impart this principle along with others, odors, taints, etc. Clean feed with timely churning and proper temperature for the milk, will probably remedy the evil.

TO RENDER WATER SOFT FOR WASHING. Stir a pint of fresh slacked lime to a gallon of water; let it settle; pour it off from the sediment carefully, and immediately bottle, and cork it tight. Add a tumblerful of this lime water to the hard water; stir it well together; let the sediments settle; then pour off the water through a Canton flannel cloth.

Domestic Receipts.

BARLEY PUDDING.—Prepare a half pound of pearl barley; one quart of new milk, and six ounces of sugar. Put the barley in fresh water, and let it steep twelve hours; pour the water from it, add the milk, sugar, and a small salt spoonful of salt, and bake it in a slow oven. If a richer pudding be required, take it out of the oven when nearly done, stir in two ounces of butter, four well beaten eggs, a little almond flavor, or any other seasoning; return it to the oven in a buttered dish, and bake it one hour.

BREAD PUDDING WITHOUT MILK OR EGGS. Take one pound of stale bread; a half pound of currants; a quarter pound of sugar, and one teaspoonful of ginger. Pour boiling water on the bread, and when cool and properly soaked, press out the water, and mash the bread, adding the sugar, currants, ginger, a little salt, and grated nutmeg; mix the whole well together; put it in a buttered dish, laying a few small pieces of butter on the top, and bake in a moderate oven; when baked, let it remain a few minutes; then turn it out on a flat dish and serve either hot or cold.

APPLE AND TAPIOCA PUDDING.—Put a teacupful of tapioca into a pint and a half of cold water over night. In the morning set it where it will be quite warm but not cook. In the course of the forenoon peel about a half a dozen sour apples and steam them until tender. Put them in the pudding dish, add a teacupful and a half of sugar, a little salt and a teacupful of water to the soaked tapioca, and pour over the apples. Slice a lemon very thin and distribute the slices over the top of the pudding. Bake slowly three hours; at the end of that time it will be perfect jelly.

POTATO PONE.—Pare and grate, on a large grater, sweet potatoes enough to make one quart of grated potato. Stir to this one pint of sweet milk, two eggs, two-thirds of a cup of butter, and enough sugar to make it pretty sweet; season with ginger. Bake till well done. Eat, hot or cold, with butter. If desired to be light-colored, put the potatoes into cold water as soon as pared, and when ready, grate into the milk. If dark-colored pone is preferred, sweeten with molasses and season with allspice. This is very rich made like pound-cake, using one and a half pounds of grated potato in place of flour.

Mechanical Hints.

MANY mechanics complain of inability to set a machine to be driven at right angles from the line or counter-shaft, without continual trouble with friction from the shifter on the belt, and the slipping of the belt to the tight or loose pulley. The operation is a simple one, and just as effectual as to drive in a direct perpendicular or horizontal. Take the center of the off or contributing side of your drive pulley and drop from it a plummet; let this line decide the center and perpendicular of the side of the tight and loose pulleys which takes your belt at a right angle below. Unless your eye is accustomed to the angles which are given to the appearance of the belt, from either side, you will condemn the position without trying, but if you are careful to get an exact perpendicular in the manner described there can be no mistake.—*Am. Manufacturer.*

TO IMPROVE WOODS.—An ingenious Frenchman has invented a process for treating common woods, which makes them of a closer texture, harder grain, and greater density, and so enables the cheaper kinds of wood to take a polish. The mode is as follows: The surface is first planed perfectly smooth, and then rubbed with diluted nitrous acid. An ounce and a half of dragon's blood, dissolved in half a pint of spirits of wine, and half an ounce of carbonate of soda are mixed together and filtered; and the liquid is then laid on the wood with a soft brush. The treatment should be repeated after a short interval, and the wood will then possess the outward appearance of mahogany. If the polish is not sufficiently brilliant, rubbing with cold drawn linseed oil will improve it.

WHITE LINES IN CABINET WORK.—The Chinese are supposed to use a combination of rice gluten and fresh shell lime in their inimitable white work; indeed, they use rice paste made by pounding boiled rice into a sticky mass, for a great number of purposes. Rice, when pounded as above, with a little plaster of Paris, is a capital substance for inlaying. In Europe, isinglass, dissolved in a strong white spirit, and any pale coloring ingredient added, constitutes artificial ivory. The dust of ivory, bone, box, or holly, made up with gelatine into paste, is also used.

LIFE THOUGHTS.

OPINIONS grounded upon mere prejudice are always sustained with the greatest violence.

A MOMENT'S work on clay tells more than an hour's work on brick. So work on hearts should be done before they harden.

A GUILTY conscience is like a whirlpool, drawing in all to itself which would otherwise pass by.

ANY one may do a casual act of good nature; but a continuation of them shows it a part of the temperament.

MAN was never intended to be idle; inactivity frustrates the very design of his creation; whereas an active life is the best guardian of virtue, and the greatest preservative of health.

WORSHIP only God. Your brother man is only His child, and in His image created always worthy of love, but never of adoration.

ONE good deed—one kind, encouraging word, or one pure, fervent aspiration is worth more unto a dying man than all the earth combined. He hath lands, wealth, and worldly honors, yet these are not that after which he is seeking.

HEAVENLY happiness and purity are worth striving for. Thy earthly yield may fail from causes beyond thy control, but thy heavenly treasures must ever increase as thou dost become more and still more pure.

FORTUNE smiles on those who roll up their sleeves and put their shoulders to the wheel.

BEAUTY is worse than wine; it intoxicates both the holder and the beholder.

Lord Macaulay on the Sabbath.

Of course I do not mean that a man will not produce more in a week by working seven days than by working six days. But I very much doubt whether, at the end of the year, he will generally have produced more by working seven days a week than by working six days a week; and I firmly believe that at the end of twenty years he will have produced less by working seven days a week than by working six days a week. The natural difference between Campania and Spitzbergen is trifling, when compared with the difference between a country inhabited by men in bodily and mental decrepitude. Therefore it is that we are not poorer, but richer, because we have, through many ages, rested from our labor one day in seven. That day is not lost. While industry is suspended, while the plow lies in the furrow, while the exchange is silent, while no smoke ascends from the factory, a process is going on quite as important to the wealth of the nation as any process which is performed on more busy days. Man, the machine of machines—the machine compared with which all the contrivances of the Watts and Arkwrights are worthless—is repairing and winding up, so that he returns to his labors on the Monday with clearer intellect, with livelier spirits, with renewed corporeal vigor.

THE EVIL THAT MEN DO LIVES AFTER THEM.—A valued correspondent writes: "I fully concur with you in the object and offices of writing, that it should instruct, elevate and make better; but you know the sordid and depraved tastes of a very large class of readers demand much that is unreal, and writers give way to it, because it pays."

Those who write for the masses have a fearful responsibility for every line of false morals they utter, and to-day, bleeding, prostrate France owes a large share of her misfortune to the teachings of Eugene Sue and the less scrupulous school of literary adventurers who followed his successful debut, in shaping the tastes and vitiating all the social life-springs of the French nation.

ALL earth shows forth too nice and delicate an adaption, too beautiful a continuation of cause and effect, to admit even of a thought that the Creator has failed in His highest creation.

THE light winged hours bear to our hearts, day and night, the evidences of God's love toward us; the seasons with varying round repeat the hollowed minstrelsy through all the grand sweep of life.

RAW cranberries will bleach a luminous nose, provided raw whisky is not continued as an illuminating agent.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING DECEMBER 26.

SAW COLLAR.—Frank A. Huntington, San Francisco, Cal.

SHINGLE MACHINE.—Frank A. Huntington, San Francisco, Cal.

LAMP.—Emil Boesch, San Francisco, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible by telegraph or otherwise at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Keeping Tomatoes Fresh.

This indispensable fruit is so easily raised and so commonly caused for winter use, that few persons seem to have thought it worth their while to attempt to discover any way to keep it fresh during the winter season. We have at this time (December 31st) tomatoes in a perfect state of preservation, and have had a great plenty for use in our family all the time until now. The mode of keeping has been very cheap and simple. Upon the first appearance of frost we threw some old pieces of carpet over a few vines that were full of the fruit in all stages of ripening. In this way they remained and continued to grow and ripen until about a month since. We then picked all the fruit from these vines, sorting them according to the degrees of ripeness. We packed them away in wheat chaff, in a dry, cool place, where they have remained since, and from which we have been using them as we wanted. From this experiment we are satisfied that tomatoes can be kept in perfect condition until the first of February. We would, by irrigating the vines, keep the fruit setting and growing as late as possible. Then we would cover the vines from the frost with any convenient covering. Straw, tule, or anything that will keep them warm, will do. If covered warm enough, the vines will continue to grow and ripen the fruit all winter. But if not so warm as to secure this result, then pick the tomatoes as soon as the vines show the effects of frost, and pack them in dry, clean sand, or in wheat chaff, and you may enjoy this delicious fruit as fresh as direct from the vines. This is a great improvement on canning. The fruit is much better, and the process is much cheaper.

THE EGYPTIAN COTTON.—A large number of experiments have been made the past summer, in several of the cotton states with a new variety of cotton known as the *Tumel Maki*, or Egyptian cotton. The reports to the Agricultural Department, from those who had received seed, are generally favorable, the variety being a late one, and the season in either the Atlantic or Gulf States being too short for its full maturity. The stalk attains a very large size, and grows and makes in the driest season, even when other cotton ceases to grow and shed its bolls. A stalk is reported from Bartrop, La., as 14 feet high and 22 feet across from tip to tip of limbs. It is possible that this variety might do well in California, as our seasons here are longer and such as would be favorable to the full development of the plant.

THE TURKISH MUSEMELONS mentioned last week are for sale by Geo. Hughes, No. 315 Washington street.

OLYMPIA, in Washington Territory, is happy over a second crop of apples, which has just been gathered at Swanton.

THE RURAL PRESS.—L. P. McCarty, one of the oldest newspaper men on the coast, and in all probability one who has the most extensive acquaintance, has been in town for the past few days looking out for the interests of the Pacific Rural Press, with which he is connected. The Press is without exception one of the best papers devoted to the agricultural interests in the United States; it certainly has no equal in California. Its large corps of contributors, well informed in every branch of industry, and its facilities for obtaining useful knowledge, make it an extremely popular periodical, in which Californians take a commendable pride and interest.—*San Jose (Daily) Guide*.

Daily Record.

By the U. S. Army Signal Service, for the week ending Wednesday, January 3, 1872.

Date and Place of Observation.	Height of Barometer.	Height of Thermometer.	Relative Humidity.	Direction of Wind.	Force of Wind.	Force of Wind, reduced to sea level.	Approximate Rainfall since last Report.	State of Weather.
San Francisco.	Thurs'dy. 31.07	52	66	S. E.	Brisk	11	Trace	Threat'g
	Friday... 30.13	47	85	Calm				Fair
	Saturday 30.16	50	86	N. W.	Fresh			Fog
	Sunday... 30.10	52	79	S.	Light		.04	Cloudy
	Monday... 29.74	51	81	Calm				Cloudy
	Tuesday... 29.82	49	85	N. E.	Gentle		.23	Light Rain
	Wed'day... 30.17	47	71	S.	Fresh			Fair
San Diego.	Thurs'dy. 30.22	48	92	E.	Light		.02	Fog
	Friday... 30.13	47	85	Calm				Fair
	Saturday 30.10	48	77	N. W.	Light			Fair
	Monday... 30.04	48	85	N. E.	Gentle			Fair
	Tuesday... 30.04	48	85	N. E.	Gentle			Fair
	Wed'day... 30.17	47	71	S.	Fresh			Fair
Virginia, N. T.	Thurs'dy. 29.72	21	74	S. E.	Fresh			Cloudy
	Friday... 29.52	9	79	S. E.	Gentle			Clear
	Saturday 29.75	13	82	S.	Fresh			Fair
	Sunday... 29.63	21	75	S. E.	Gentle			Fair
	Monday... 29.63	33	66	S. W.	Brisk			Clear
	Tuesday... 30.18	31	79	N.	Gentle			Cloudy
	Friday... 30.35	29	85	N.	Gentle			Clear
	Saturday 30.23	19	65	N.	Fresh			Fair
	Sunday... 30.13	19	85	N. W.	Light			Cloudy
	Monday... 30.06	26	76	N. W.	Gentle			Cloudy
	Tuesday... 30.01	41	56	S. E.	Light			Cloudy
	Wed'day... 29.96	39	56	S. W.	Fresh			Cloudy
Chapman, N. T.	Thurs'dy. 30.05	30	59	W.	Brisk			Clear
	Friday... 30.21	13	79	N. W.	Fresh			Clear
	Saturday 30.06	9	76	N. W.	Light			Clear
	Sunday... 29.85	24	81	N. W.	Fresh			Fair
	Monday... 29.88	32	48	N. W.	Fresh			Fair
	Tuesday... 30.01	38	56	Calm				Cloudy
	Wed'day... 29.92	54	52	S. W.	Gentle			Fair
Danvers, Cal.	Thurs'dy. 30.10	31	79	S.	Fresh			Fair
	Friday... 30.24	20	85	Calm				Clear
	Saturday 30.13	9	78	S. W.	Gentle			Clear
	Sunday... 30.01	13	81	S.	Fresh			Clear
	Monday... 30.01	22	85	S.	Gentle			Clear
	Tuesday... 30.03	37	52	S. W.	Fresh			Cloudy
	Wed'day... 29.92	44	30	W.	Fresh			Fair
Oranienburg, N. Y.	Thurs'dy. 30.26	4	74	N. W.	Light			Clear
	Friday... 30.11	26	75	N. W.	Fresh			Cloudy
	Saturday 30.29	18	81	Calm				Foggy
	Monday... 30.21	20	85	S.	Light			Cloudy
	Tuesday... 30.10	27	88	S.	Gentle			Fair
	Wed'day... 29.96	33	89	S.	Fresh			Fair
Baltimore, Md.	Thurs'dy. 30.13	18	67	N. W.	Brisk			Threat.
	Friday... 30.08	34	79	N. W.	Gentle			Clear
	Saturday 30.27	22	85	N. E.	Fresh			Fair
	Sunday... 30.37	24	84	S. E.	Fresh			Cloudy
	Monday... 31.37	16	83	N.	Fresh			Clear
	Tuesday... 30.36	25	86	S.	Fresh			Cloudy
	Wed'day... 30.36	25	86	S.	Fresh			Cloudy

Sacramento.

[By T. M. LOGAN, M. D., Secretary State Board of Health.]

Jan. 1, 1872. Rainfall for the season to date... 12.421 inches from Jan. 1... 3.000

Total for the season up to Jan. 10, 1872... 15.451 inches. REMARKS.—The succession of southeast storms, which set in on the 15th of Dec. last, appears at last to have exhausted themselves, leaving our plains deluged and an ample supply of water impounded on our mountain summits, in the form of snow. At all events the indications at the present writing are favorable for clear weather. Wind N. W. and barometer steadily rising.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Jan. 11.

FLOUR.—We note a fair local demand with a moderate enquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.75@6.00; extra, in sacks, of 196 lbs. \$7.00. Standard Oregon brands, extra may be quoted at \$7.00.

WHEAT.—In limited demand, and but little inquiry for export. Prices show a further decline. Sales aggregate 10,000 sacks fair to choice at \$2.20@2.30 per 100 lbs. Quotable at close at \$2.15@2.30 per 100 lbs.

The latest Liverpool market quotation comes through at 13s. per cental—an advance since our last weekly review of 4d.

BARLEY.—Has been very quiet during the past week, at a decline in prices. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.50@1.75, which is the range at close.

OATS.—Market has been inactive during the week under review. Sales 2,500 sacks ordinary coast to choice bay, at \$1.65@1.80 per 100 lbs. which is the range at close.

CORN.—Is quotable at 2.05@2.15 for yellow and white respectively per 100 lbs.

CORNMEAL.—Is quotable at \$2.75@3.25 from the mill.

BUCKWHEAT.—Is dull at \$2.50 per 100 lbs.

RYE.—According to quality is quotable at \$2.37½@2.40 per 100 lbs.

STRAW.—Quotable at \$7.00@8.00 per ton by the cargo.

BRAN.—Selling at \$31 per ton from the mill.

MIDDINGS.—For feed, are selling at \$42.50 per ton from mills.

OIL CAKE MEAL.—In good demand at \$30 from the mill.

HAY.—Receipts have been light, and prices at close are \$17@22 for fair to choice per ton.

HONEY.—We quote Los Angeles comb at 12½¢@15¢. Potter's in 2-lb cans, \$4 per doz.

BEESWAX.—In good demand at 40¢ per lb. **POTATOES.**—Market has been quite dull during past week owing to few receipts. Different qualities are selling at 50¢@90¢ per ctl.

SWEET POTATOES.—Are selling at \$1.25 per 100 lbs.

HOPS.—The range is 45¢@60¢.

HIDES.—During past week 1,142 Cal. dry sold at 18¢@19 and 1,265 salted at 8¢@9½¢.

WOOL.—The market has been quite firm during the week under review; sales of 70,000 lbs. are reported at full rates. Prices for good

to choice shipping grades are 22¢@28¢ per lb. Sales of extra choice at 30¢; burry 17¢@21¢.

TALLOW.—Market quiet at 8½¢@9¢ per lb. **SEEDS.**—Flax 3¢; Canary, 5¢@7¢; Alfalfa, 15¢@17¢; Mustard—California Brown, 3¢@6¢; Cal. White 3½¢@4½¢ per lb.

PROVISIONS.—California Bacon 13½¢@14¢; Oregon, 14½¢@15¢; Eastern do. 13½¢@14¢; for clear and 14¢@15 for sugar-cured Breakfast; Cal. Hams 14¢@14½¢; Oregon, 15½¢@16¢; California Sugar-cured Hams, 16½¢@17¢; Oregon do. 17¢@18¢; Eastern do. 18¢@20¢; California Smoked Beef, 13¢@14¢ per lb.

BEANS.—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3; Bayo, \$3.40@3.60; Navy \$3.50 per 100 lbs.

ONIONS.—Fair to choice Silverskins \$1.00@1.50 per 100 lbs.

NUTS.—California Almonds, 8¢@10¢ for hard and 18¢@25 for soft shell; Pecans, 5¢@7¢; Pecan, 25¢ per lb Walnuts, new, 12½¢; Hickory, 12¢; Brazil, 16¢; Chili Walnuts 10¢; Eastern Chestnuts 25¢ per lb.; Cocoanuts \$6.00 per 100.

COFFEE.—Costa Rica 21¢; Guatemala 20¢; Java 25¢; Manilla, 19½¢; Rio 19½¢@20. Ground Coffee in cases 30¢.

SPICES.—Allspice 14¢@15¢. Cloves 16¢@17¢. Cassia 35¢@36¢. Nutmegs \$1.00@1.10. Whole Pepper 19¢. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15¢ per lb.

FRESH MEAT.—Market has remained firm since last report. We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 10¢@11¢ per lb. do. 2d quality 9¢@10¢ per lb.; do. 3d do. 7¢@8¢.

VEAL.—Quotable at 8¢@11¢.

MUTTON.—10¢@11¢ per lb.

LAMB.—12½¢ per lb.

PORK.—Undressed grain-fed is quotable at 6¢@6½¢, dressed, grain-fed, 9¢@9½¢ per lb.

POULTRY.—Live Turkeys, 20¢@21¢ per lb, dressed, 22¢@25¢ per lb.; Hens and large fowls, \$9.00 per dozen; Spring Chickens, \$7.00@8.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME.—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.00@3.50; Small Ducks, \$1.50; Wild Geese \$1.50@3.00 per doz.

DAIRY PRODUCTS.—California Butter, common to good in rolls, may be quoted at 40¢@47¢; California firkin butter, 27½¢@32½¢. Pickled 25¢@32½¢. Eastern firkin 20¢@30¢ per lb.

CHEESE.—California, 15¢@19¢, Eastern, 16¢@17¢ per lb.

Eggs.—California fresh, 60¢@65¢ per doz.

LARD.—California 12½¢@13½¢; Oregon in bbls. and kegs 12½¢@13¢; Eastern in cases 14½¢@15 do in tes. 12½¢@13¢ per lb.

FRUIT.

Mex. Oranges, M. \$25 00@35 00 Cal. do 25 00@30 00 California do. 15 00@25 00 Bananas, bunch 2 50@3 50 Limes, 100 00@15 00 Apples, eating, box 1 25@2 50 Auslin Lemons, box 4 00@5 00 do cooking, box 1 00@1 50 Sicily do 25 00@35 00 Peas, box 75 00@3 00

DRIED FRUIT.

Apples, per lb. 6¢@7¢ Pitted, do 20¢@22¢ Peas, per lb. 8¢@10¢ Raisins, do 10¢@15¢ Peaches, per lb. 8¢@9¢ Black Figs, do 8¢@12½¢ Apricots, do 8¢@8½¢ White, do 15¢@20¢ Plums, per lb. 6¢@8¢

VEGETABLES.

Cabbage, per lb. 1¢@1¼¢ Marf. Squash, ton \$10 00@15 00 Garlic, per lb. 1¢@1¼¢

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Dealers report a good demand for seasonable articles under this head.

BAGS AND BAGGING.—There is only a moderate demand for any kind at present, and prices remain largely nominal.

BOOTS AND SHOES.—There has been a fair demand during the week under review for goods in this line at unchanged rates.

BUILDING AND FENCING MATERIALS.—The local trade has been fair, and only moderate demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do dressed \$30; Spruce \$17@18; Redwood \$16@30, for rough and dressed. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, \$31 00 to \$32 50 Refuse do 20 00 to 21 50 Merchantable surfaced and rough clear 28 00 to 30 00 Refuse surfaced and rough 18 00 to 20 00 Merchantable beaded flooring 28 00 to 30 00 Refuse do 18 00 to 20 00 Merchantable rough 15 00 to 16 00 Refuse do 11 00 to 12 00 Fancy Pickets 22 50 to 25 00 Rough Pickets 15 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

FISH.—We quote Pacific Dry Cod in bundles at 5¢, and in cases at 8¢@8½¢; Salmon, in bbls. \$5.50@7.50, hf do, \$3.50@4.50; Case Salmon, \$2@3 per doz for 1@2-bb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85¢ per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; No. 1, via Cape Horn, \$8@10 for hf bbls and \$2.50 for kits; Smoked Salmon, 7¢@7½¢ per lb.

NAILS.—Quotable at \$5.50@7.75 for invoice lots ex ship.

PAPER.—California Straw Wrapping, sells at \$1.50 per ream.

PAINTS.—We quote White Lead at 10¢@12½¢; Whitening, 2¢; Chalk 2½¢ per lb.

RICE.—Sales of China No. 1 at 8½¢@8½¢ and No. 2 at 7½¢@8¢ per lb; Siam, quotable at 7¢@7½¢ in mats; Carolina, 10¢; Table, 9¢@9½¢ per lb.

SUGAR.—We quote Cal. Cube at 11½¢; Cir-

cled A Crushed, 14½¢, and Granulated 14¢; Yellow Coffee and Golden C, 12½¢@13¢; Hawaiian 8¢@12¢ as extremes per lb.

SYRUP.—Prices may be given as follows: 82½¢ in bbls, 85 in hf bbls, and 90¢ in kegs.

SALT.—California Bay sells at \$5@15; Carmen Island, in bulk, \$13; Liverpool Course, \$18@20; do Stoved, \$22.50 per ton.

SOAP.—The prices for local brands at 5¢@10¢, and Castile at 11¢@12½¢ per lb.

TEA.—We quote Hyson at 60¢@75¢; Gunpowder and Imperial, 95¢@1.05; Young Hyson and Moyune, 90¢@1.15; Foo Chow Oolong, 50¢@90¢; Pouchong, 37½¢@45¢; Souchong, 50¢@75¢; Japan 40¢@75¢ per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, January 4th, 1872.

MISCELLANEOUS.

Butter, Cal fr. do 65 66 Wheat, sds, 2x36 12 13 Pickled, Cal. do 40 41 Potato G'y Bags. 22 23 Cal. do 40 41 Second-hand do 15 16 Honey, per lb. 25 26 Deer Skins, per lb. 15 16 Cranberry, per doz. 20 25 Sheep skins, w/ on 50 55 Eggs, per doz. 60 60 Sheepskins, 12½¢ 25 Lard, per lb. 18 20 Goat skins, each. 25 30 Sugar, cr. 6½ 100 00 Dry Cal. Hides. 18 20 Brown, do 10 13 Salted do. 20 25 Beef, do 1 00 00 Dry Mex. Hides. 17 20 Sugar, Marf. do 25 30 Salted do. 9 25 Plums, dried, do. 15 30 Codfish, dry, lb. 10 12½ Peaches, dried, 15 30 Live Oak Wood. 9 50@10 00 Wool Sacks, new 8 50 Tallow. 8 50 Second-hand do 6 75 70

Flour, ex. 55 70 Superfine, do 60 65 Corn Meal, 100 lb. 3 50 Wheat, per 100 lbs. 4 25 Oats, per 100 lbs. 1 75

Barley, cwt. 1 85 Beans, cwt. 3 50 Hay, per ton. 23 00 Potatoes, per cwt. 75 71

FRUITS, VEGETABLES, ETC.

Pine Apples, 4 50 Bananas, bunch 2 50 Cal. Walnuts, do. 20 20 Cranberries, per lb. 75 100 Green Peas, per lb. 12 15 Raspberries, 2 50 Lettuce, per doz. 12 25 Pears,

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, January 11.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, $\frac{1}{2}$ lb. 26@29

Santa Cruz Leather, $\frac{1}{2}$ lb. 26@29

Country Leather, $\frac{1}{2}$ lb. 25@28

The market is well supplied with French stocks, and prices have downward tendency. Heavy California skins are firm, with an upward tendency.

Jodot, 8 Kil., per doz.	\$80 00@
Jodot, 11 to 19 Kil., per doz.	76 00@ 95 00
Jodot, second choice, 11 to 15 Kil., per doz.	60 00@ 80 00
Lemoine, 16 to 19 Kil., per doz.	95 00@
Levin, 12 and 13 Kil., per doz.	65 00@ 70 00
Cornellian, 16 Kil., per doz.	72 00@
Cornellian, 12 to 14 Kil., per doz.	65 00@ 70 00
Ogeran Calf, $\frac{1}{2}$ doz.	54 00@
Simon, 18 Kil., per doz.	65 00
Simon, 20 Kil., per doz.	65 00
Simon, 24 Kil., per doz.	72 00
Robert Calf, 7 and 8 Kil., per doz.	35 00@ 40 00
French Kips, $\frac{1}{2}$ lb.	1 00@ 1 30
California Kip, $\frac{1}{2}$ lb.	65 00@ 80 00
French Sheep, all colors, per doz.	15 00
Eastern Calf for Backs, $\frac{1}{2}$ lb.	1 15@ 1 25
Sheep Roans for Topping, all colors, per doz.	8 00@ 13 00
Sheep Roans for Linings, per doz.	5 50@ 10 50
California Russet Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, per pair	5 25
Good French Calf Boot Legs, per pair	4 50@ 5 00
French Calf Boot Legs, per pair	4 00
Harness Leather, $\frac{1}{2}$ lb.	30@ 37 1/2
Fair Bridle Leather, $\frac{1}{2}$ lb.	48 00@ 72 00
Skirting Leather, $\frac{1}{2}$ lb.	34@ 37 1/2
Well Leather, $\frac{1}{2}$ lb.	30 00@ 50 00
Buff Leather, $\frac{1}{2}$ lb.	1 75@ 2 1
Wax Side Leather, $\frac{1}{2}$ lb.	18@ 29

Farmers and others for the RURAL PRESS them promptly once adding as many new strength, and we will one next year. Our hand to the plow will not turn backward. We hope none of our early friends will falter from our army of progression until entire success is carried and a thoroughly defined system of improved agriculture is understood and adopted throughout the coast. Cash up to the man who took your subscription last year, whether he calls on you or not. Don't wait for a more favorable time. Any reliable person may get up a club for us without further authority. Sample copies and list of present subscribers furnished for any neighborhood on application. Commence work, and send for list at any time. We must help one another. Your efforts will not be forgotten by DEWEY & CO.

Renew Your Clubs.

who got up clubs last year, can renew more at \$3 per year, names as possible. renew its siewes of give you a better one next year. Our hand to the plow will not turn backward. We hope none of our early friends will falter from our army of progression until entire success is carried and a thoroughly defined system of improved agriculture is understood and adopted throughout the coast. Cash up to the man who took your subscription last year, whether he calls on you or not. Don't wait for a more favorable time. Any reliable person may get up a club for us without further authority. Sample copies and list of present subscribers furnished for any neighborhood on application. Commence work, and send for list at any time. We must help one another. Your efforts will not be forgotten by DEWEY & CO.

The Fruits and Fruit Trees of America, or the Culture, Propagation, and Management, in the Garden and Orchard, of Fruit Trees generally, with descriptions of all the finest varieties of Fruit, Native and Foreign, cultivated in the country. By A. J. DOWNING. Illustrated; 1088 pages; 1869. The best authority, and only complete work. Price, in cloth and gilt, \$5, post paid, by DEWEY & Co., this office

New American Farm Book—originally by R. L. Allen; revised by Lewis F. Allen, 1871. Embracing information on all general subjects pertaining to Farming and all branches of Husbandry—a wide range, yet very fully and ably treated. 328 pages. Price \$3, post paid, by DEWEY & Co., this office.

Harris (Joseph) on the Pig. Breeding, Rearing, Management and Improvement. Illus., 250 pages, 1870. Interesting to all readers; instructive and full of hints to raisers. Price \$2, post paid from this office.

Cranberry Culture, by a Practical Grower in N. J., Joseph J. White. A special treatise of 126 pages, Post paid from this office, \$1.75.

Farm Implements and Farm Machinery, and the principles of their construction and use. With simple and practical explanations of the Laws of Motion and Force as applied on the Farm; by John J. Thomas; 287 Illustrations and 302 pages. Sold by DEWEY & Co., post-paid, for \$1.75.

VOLS. I AND II

Of the PACIFIC RURAL PRESS can now be had, complete, for \$3 per volume. Bound, \$5. A few files only have been saved.

Dickey's Liquid Rennet,

For making Slip, Curds, Whey, Custard, Etc., and for preparing INFANTS' Food.

It is prepared from the lining membrane of the stomach of the calf, and is invaluable as a corrective to render cow's milk digestible when it is found to disagree with the tender infant. Full directions accompany each bottle, which is sufficient for eight gallons of milk.

For sale by all druggists and grocers. 1v3-3m

Go to the Best.—Young and middle-aged men should remember that the PACIFIC BUSINESS COLLEGE is the oldest and most popular and successful Business Training School on this coast. Upwards of Three Thousand Students have attended during the past six years, many of whom now hold prominent positions in the first banking and mercantile houses of this city. This is the MODEL TRAINING SCHOOL FOR BUSINESS on this coast, having the greatest corps of Professors and Teachers, and the greatest number of students in attendance, of any institution of the kind. Young men flock to this College from all parts of the Pacific States and Territories, British Columbia, Mexico, Sandwich Islands and South America. We shall be pleased to send our College Circular, giving full information, to all who send us their address. When you write, mention that you saw this notice in the PACIFIC RURAL PRESS.

M. K. LAUDEN, President, San Francisco, Cal.

A TEA CULTURIST wants a situation. Zamba, a young Japanese, now stopping at 614 Pine street, San Francisco. Can also do ornamental hair work.

Annual Meeting.

The Annual meeting of the STATE AGRICULTURAL SOCIETY, for the election of officers for the ensuing year, and for the transaction of other business, will be held at Agricultural Hall, corner 6th and M streets, Sacramento, on the 24th instant, at 12 o'clock noon.

A general attendance is requested. By order of the Board. I. N. HOAG, Cor. Secretary.

Farmers and Gardeners, Attention.

Do you want to buy SEEDS AND PLANTS

that you may surely rely on? Go to SEVIN VINCENT & CO.,

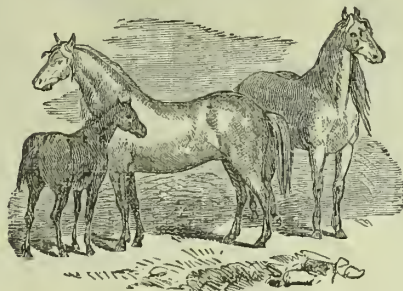
the well-known Seed Dealers, 605 Sansome St., between Washington and Jackson streets, San Francisco, and Brooklyn, Alameda county. Mr. Sevin Vincent is the only Seed Grower of California. He guarantees the superior quality of his seeds, and all those imported here with the greatest care before selling. Be sure he will sell you the best and cheapest. jrl3-2m8t

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A FULL BLOODED MARE.



White Prince was five years old last spring, and possesses the square, compact, solid form, with the good action of the Percheron race.

The Mare was bred in Ohio, from Imported Percheron Stock, and has been

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Louisa, at four months old, weighed 640 pounds; girths, 5 feet; weight is not a matter of great interest; but the square, compact, nice form which she presents, is a matter to be especially noted.

I also at the same time (December last) imported

TWO THREE-QUARTER BLOOD MARES,

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From the above it will be seen that I am able to raise Full Bloods and High Grades.

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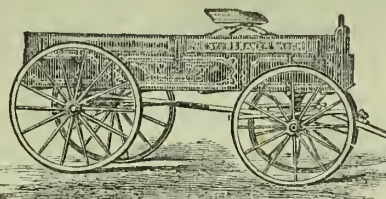
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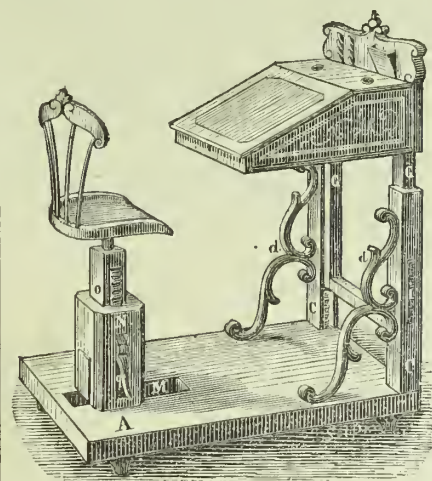
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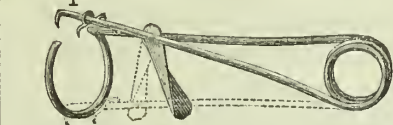
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They are made of the best material, and every Plow warranted.

They are of light draught, easily adapted to any depth, and are very easily handled.

They will plow any kind of soil, and leave the ground in perfect order.

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These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

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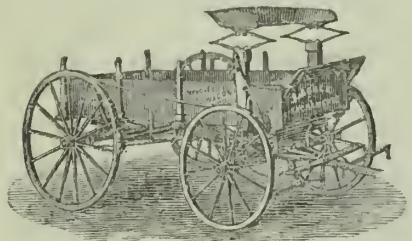


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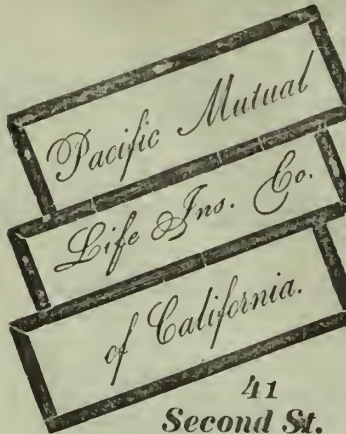
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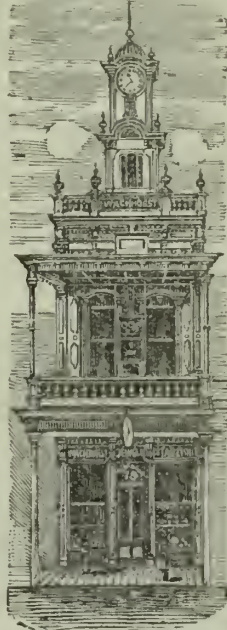
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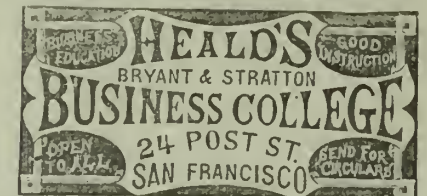
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This Company charges no more for Premiums on its insurance than those companies who have the unjust clause (pay promptly or forfeit) embodied in their policies.

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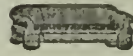
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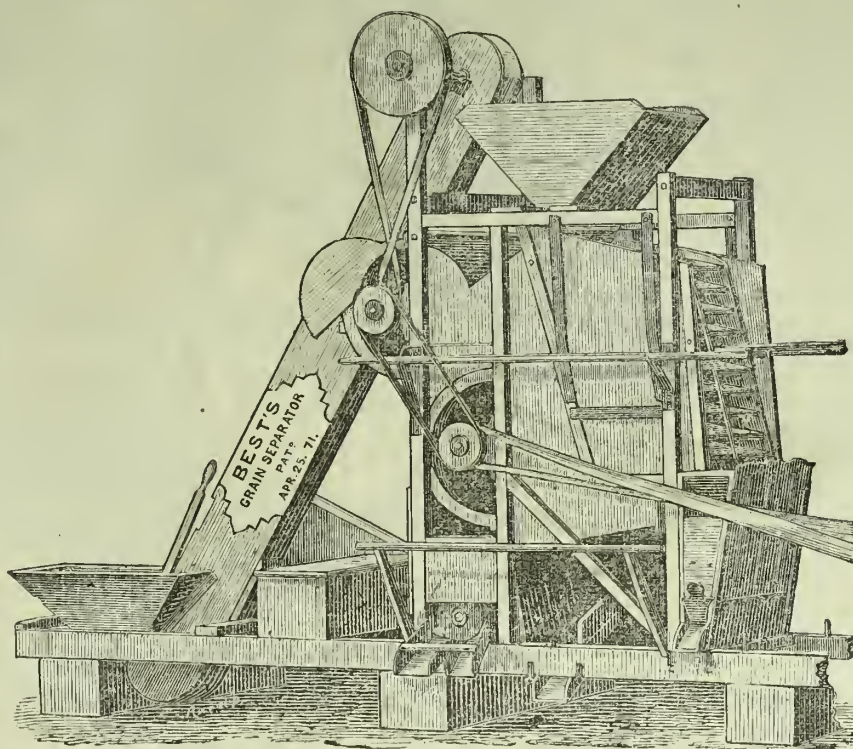
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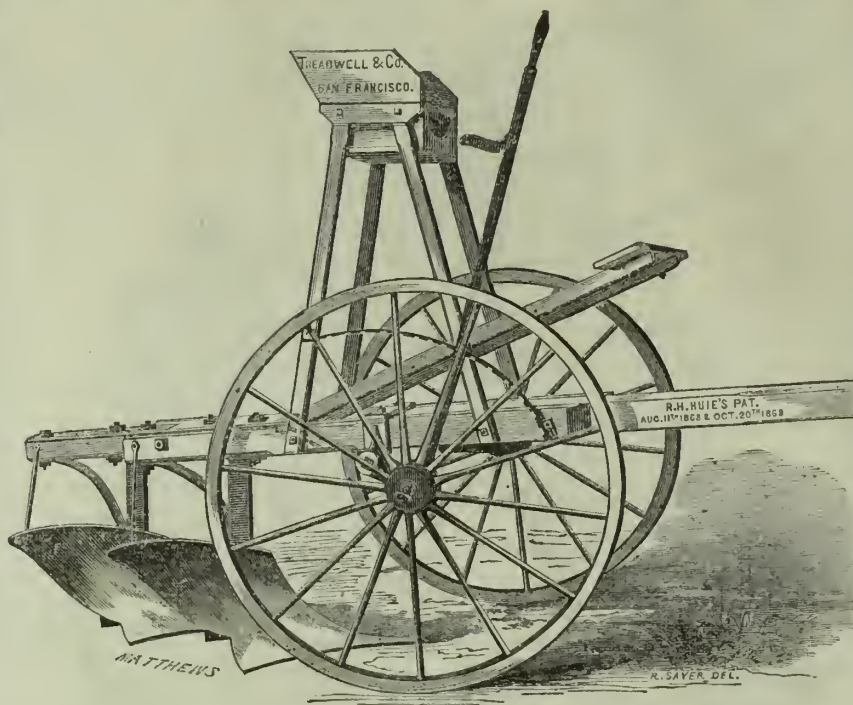
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Guaranteed Pure, and bred direct from the finest imported stock in America.

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Of the above varieties for sale carefully packed.

Poultry Yard at San Leandro, Alameda county, Cal.

Address **W. FORD THOMAS,**
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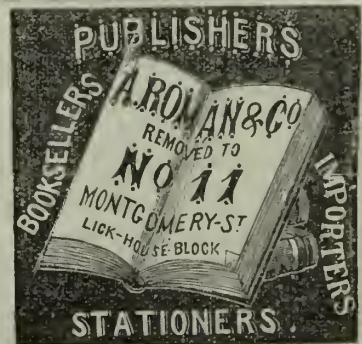
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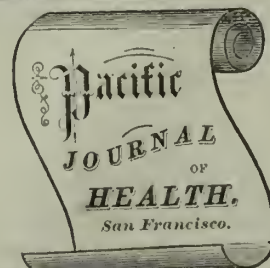
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Volume III.]

SAN FRANCISCO, SATURDAY, JANUARY 20, 1872.

[Number 3.]

About Sheep in General.

The sheep if not pre-eminent is certainly one of the most useful animals that the Creator has bestowed upon man. Whether we refer to sacred or profane history we find this among the earliest animals mentioned. Of course the sheep was originally wild, and has been subdued and domesticated by man, to answer to his necessities and wants. There are many varieties of this animal still wild and unsubdued, and naturalists are quite undecided as to which of the several varieties may be entitled to the distinction of being the parent-stock of the domestic sheep.

Wild Sheep.

There are four principal divisions of the wild sheep: Musmon (*musemon*) still found wild in some of the Mediterranean islands, and European Turkey; the Argali (*ammon*) tenants of the Himalays and other high mountains in Central Asia; the Bearded sheep of Africa (*tragelopleus*) found on the highlands of Egypt and Morocco, and the Rocky Mountain sheep, (*Montana*), the only variety found wild on this continent.

The sheep is naturally a lover of the mountains, and in a state of nature is scarcely less active than the goat, from which it is usually regarded by naturalists as generically different—though not by all. All the wild varieties are horned—the Rocky Mountain variety being the most abundantly blessed, (or burdened,) in this particular, and also possessing the largest bodily proportions.

Domesticated Varieties.

The many varieties of sheep domesticated in Europe and this country, all of which have descended from one common stock, may be conveniently divided into two general classes—those having horns and those without. Of the horned sheep, the chief varieties are:—The *Dorset*—a good folding sheep, producing well-flavored flesh; the *Shetland*, small, handsome, and hardy; the *Hedridian*, the smallest of its kind, sometimes not weighing over 20 pounds, when fat, and the *Merino*, the most important and best known of all; which was brought to its greatest perfection in Spain.

The accompanying figure presents a representative individual of this variety, bred by Victor Wright, of Middlebury, Vt., from pure *Infantando* stock; but now belonging to Henry Thorpe, of Charlotte, in the same State.

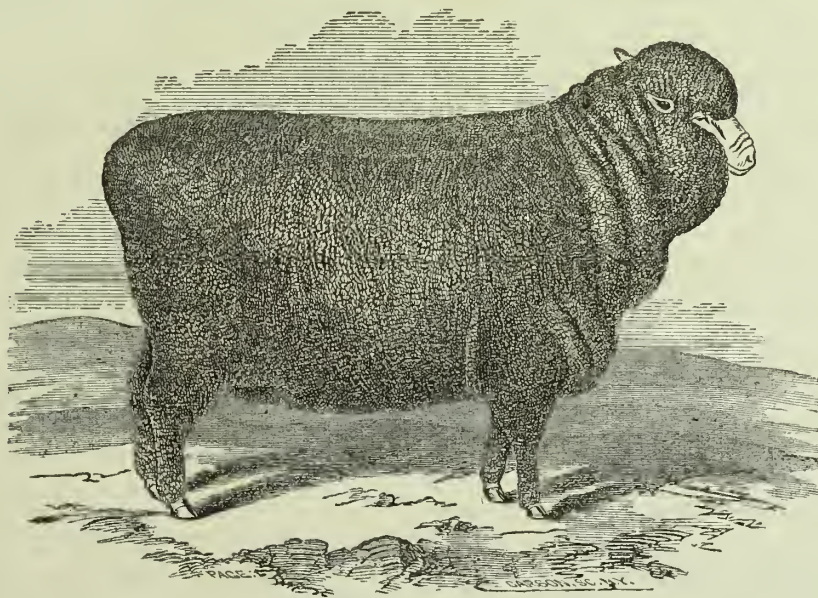
Of the hornless sheep we have the *Leicester*, characterized by fineness and fullness of form and special propensity to fatten; the *Cotswold*, long celebrated for their fineness of wool; the *Dartmoor*, an ordinary breed, with white faces and legs and sometimes with horns; the *Cheviot*, a peculiar breed, which originated on the Cheviot hills, very hardy but not very profitable; the *Southdown*, so called from an extensive tract of "down" land, in the counties of Essex and Sussex, England, with close-curling wool, nearly identical with which are the *Shropshiredowns*, named from the down lands of the county of Shropshire.

Of the other remarkable domestic varie-

ties found in different parts of the world we may mention the *Fat-tailed* sheep of Tartary, Arabia, and Persia, the tails of which are so loaded with fat, that they are said sometimes to weigh 20 pounds; the *Fat-rumped Tailless* sheep—a misnomer, for they have a tail; but so enveloped in fat upon the rump as to be scarcely visible (this breed has pendant ears;) the *Many-horned* sheep of Iceland and Northern Russia, which has three, four, and sometimes five horns; the *Cretan* sheep, of the island of Crete, kept in some parts of Europe as a curiosity on account of the peculiarity of their horns, which are remarkably large, long and spiral; and lastly, the *African or Guiana* sheep, a native of all the tropical countries of Africa and the East. The distinguished features of this breed

term variety is applied to different national branches of the same breed, such as the Saxon, French and American varieties of the parent Spanish Merino. The term Family is used to designate those branches of a breed or variety found in the same country, which exhibit permanent but ordinarily lesser differences than varieties. Thus the different kinds of Downs and the Rylands are families of the English Short-Wooled Sheep; the Cotswolds and the Leicesters are families of the Long-Wooled sheep; the Infantados and Paulars are families of both the Spanish and American Merinos. The term sub-family is occasionally used to designate a minor group, bearing the same relation to a family that a family does to a variety.

The system of classification above described, answers very well when applied to the Merino. This breed exhibits all the enumerated classes in permanent, distinct forms, each to a certain extent iso-



MR. THORPE'S EWE—KATE.

are—a rough, heavy skin, sharp horns, pendulous ears, a dewlap under the chin, and a long mane which reaches below the neck.

A Difficulty.

Much difficulty has been experienced by writers on sheep from the want of an established and systematic nomenclature to express the various divisions of species, which, in the process of time, by interbreeding, etc., have become both numerous and oftentimes perplexing. A confusion of terms often leads to a corresponding confusion of ideas. This matter has been especially noticed by Mr. Henry S. Randall, in his very excellent work, entitled the "Practical Shepherd." To devise a uniform mode of classification in the premises, he has made use of and adopted in his work the following:—

The term breed is applied to those extensive and permanent groups of sheep which are believed to have had, respectively, a common origin—which exhibit certain common leading characteristics—and which transmit those characteristics with uniformity to their progeny. Examples of Breeds, are the Merino of Spain, including its pure blood descendants, wherever found; the Fat-Rumped Sheep of Asia, the Long-Wooled Sheep of England, and the Short-Wooled Sheep of England. The

lated from the others by separate breeding, for a considerable period, and totally isolated from all other outside groups of sheep by perfect purity of blood. But this classification is wholly unsatisfactory when applied to the British breeds of sheep. I will not consume space to explain, a fact, the causes of which will be so obvious to the observing reader.

PARK COMMISSIONERS' REPORT.—We have received from the hand of William Hammond Hall, Engineer and Superintendent of the Golden Gate Park, the first Biennial Report of the Park Commissioners. It is an elaborate document setting forth the contemplated improvements and the actual progress made in laying out and beautifying the grounds, the amount already expended and the balance on hand.

It appears that the eastern end of the Park and the Avenue Reserve have received the first attention from the engineer, and already give evidence of a master hand. In a few months, pleasure grounds, lawns, conservatories and flower gardens will beautify the landscape, and carriage drives and avenues will meander through the Park, in the midst of natural shrubbery and around artificial lakes. We can even now congratulate our citizens on the prospect of a Park that will be second to no other in the United States. San Francisco has the money to make it so, and we have seen New York Central Park.

Culture of Raisins.

The growing of grapes for raisins is attracting the attention of culturists in very many of the best grape producing districts of the State; partly from a desire to be the growers of raisins, but in many localities because it will pay better than to market the grapes in their undried state. There is always a risk attending the transportation and sale of fresh grapes, particularly where the handling is entrusted to other hands than the owner. Raisins never suffer from handling if put up in proper packages, and the weight of the same in contrast with the undried fruit, is a point entirely in favor of the producer who pays his own freight per pound.

We have been asked our opinion in regard to the most desirable locality for the production of raisins as a specialty. There are reasons for preferring certain rich, strong lands for this purpose. Raisins, to sell the best, should be large; and though the dry and chalky foothill districts may produce a grape of higher flavor, and therefore superior for wine, they never reach that size of bunch or berry desirable in a raisin-grape, unless the growing is attended with profuse irrigation. The length of the season, for the growth of the grape, producing an early maturity, and giving a longer drying season before the autumnal rains, is also in favor of the low and heated valley lands. Not that the higher lands and foothill valleys will not produce excellent raisins; but that, thus far in the production of California raisins, we have not seen those that compare favorably with the best imported, with reference to size.

Small raisins will sell at some price always, but large ones will sell at almost any price, and it is just as easy, and easier to raise large than small ones, as there are not as many bunches to handle during the drying. Of the best varieties for raisins, we cannot do better than to refer to one of the most successful growers in California, B. N. Bugbey, of the Natoma vineyard, Folsom, whose raisins have been on frequent exhibition at our State Fairs for the past five years. He can give the names of the best raisin-grapes for his locality. Whether he has the varieties for sale in the form of cuttings or rooted plants, we know not.

KEEP A FEW HENS.—Why is it that we must year by year import stale eggs from Chicago, and even Chiua, to supply our home demand? Not that we want stale eggs from any source; but the fact is undeniable that we do import and use eggs of the quality referred to in enormous quantities and at high prices, all because our farmers, and particularly grain growers, will not, or do not keep a few hens. We are aware that a few failures have occurred where the attempt has been made to establish large heneries, to support which the entire food was necessarily purchased, because the proprietors were not grain growers; and a further reason of failure perhaps was in the attempt to keep too many fowls in one locality. It has been shown again and again, that small numbers of fowls can be kept in perfect health, where larger numbers invariably sicken and die. Whether it arises from the want of insect food, so natural to fowls, or in the scarcity in many localities of the necessary sharp gravel for the gizzard, is not satisfactorily determined. But, that a few hens can be safely and profitably kept on every ranch in the State, is as certain as that the said ranch affords barn, out-house or stable room for their comfort or protection.

There are 60,000,000 acres of wheat lands in California, of which only 2,600,000 are under cultivation.

CORRESPONDENCE.

Agriculture in Montana.

[BY OUR OWN TRAVELER.]

The first essays of agricultural enterprise in this Territory were made by the Jesuit missionaries some 25 years ago. The country is comparatively well-wooded having large bodies of timber in several localities; the slopes of the mountain ranges are generally covered with heavy timber. It contains eight principal valleys, viz.: Flat Head, Mission, Jocko, Hell Gate, Bitter Root, Big Blackfoot, Flint, and Deer Lodge, with many smaller ones of great beauty and fertility.

Passameri Valley.

This small but productive valley generally called the Stinking Water Valley, is 30 miles long by 6 miles wide, and is watered by a small stream which passes through its entire length.

Sheridan City

Is situated 20 miles from Virginia City, and is a small village with a post office, blacksmith shop, a good school, and a flouring mill, located on Mill Creek; it is run by water-power and turns out 100 sacks of flour daily.

Ranches.

Mr. J. Gambell has a fine ranch near the town and this season cultivated 95 acres, which yield him 25 bushels of grain to the acre. Mr. Foster this year raised upon his own farm a large crop of grain and cultivated the farm of Mrs. J. Farris. The yield from 55 acres was 1,600 bushels. Ninety acres upon another ranch produced 1,458 bushels of wheat and 1,200 bushels of oats. The price of wheat is from \$2 to \$2.50 per bushel, and flour \$8 a sack.

Fattening Hogs.

I noticed upon the farm of Mr. A. H. Van Brucklin a novel apparatus for preparing food for hogs. It consisted of a wooden tank 3 feet long and 2½ feet wide, the bottom being lined with sheet iron. This box is placed over a fire place, and filled with potatoes, grain and peas which are boiled together, after which the contents are put into barrels and kept for feeding. The hogs thrive upon it, and Mr. V. has been quite successful in this business.

Mr. E. H. Coombs has a farm of 320 acres, 90 of which were in wheat and oats the present season. He also raised 150 tons of hay, which he sold at \$12 per ton. His wheat averaged 30 bushels to the acre. This is one of the best improved and most productive farms in the valley.

Mr. J. Redfern has a small ranch planted with apple trees, which have done well and he thinks this locality well adapted for this kind of fruit. Mr. Bull raised upon his ranch this season 5 acres of wheat, and 500 bushels of oats from 14 acres. The price of oats is one dollar per bushel. Oats and barley are sown after the wheat.

Silver Spring Flour Mill.

This mill is located in the middle of the valley and is first class throughout. The building is 40 by 27 feet, and 4 stories high. It has 3 run of stones which are driven by an over shot wheel 24 feet in diameter. The water is brought from a large spring several miles distant. Mr. L. B. Olds is the Superintendent and H. H. Mood, miller.

Mr. John Taylor cultivated 180 acres of wheat this season, which averages 25 bushels to the acre. It was sown April 1st and harvested Aug. 15th. Upon this ranch from 250 to 500 bushels of potatoes were raised per acre. The farmers say, that if the ground is plowed every year it should be plowed only 4 or 5 inches deep.

Threshing Machines.

Three threshing machines are in operation in the valley this fall. Mr. O. W. Jay threshed 270 bushels of oats in one hour, and 1,900 bushels in 9½ hours upon the ranch of Mr. A. Cisler of Mill Creek.

Prices.

Spring grains were sold this season at the following prices. Wheat, from 6 to 8 cents per pound, and barley from 4 to 5 cents. Potatoes brought 3 cents; eggs \$1 per dozen, butter from 50 to 75 cents per pound. General house help is very scarce, and in demand at from \$40 to \$60 per month and board. The good

farmers also complain of the scarcity of marriageable women.

Baker's Wheat.

This wheat is said to be some two weeks earlier than the "Touse" variety. Mr. Baker planted his wheat last spring, April 5th, and harvested the crop July 15th. This wheat makes XXX flour. It is of a small grain, but gives general satisfaction. Its weight is about 66 lbs. to the bushel. His land averaged 30 bushels to the acre, 30 acres of which was up-land.

Irrigation.

I have learned from the farmers in this valley a few items upon this important subject. Bench lands should be irrigated in the spring, before plowing, say March 1st. The soil in this country should be irrigated before it is plowed. The bench lands can be plowed as soon as the water is turned off. Sow and harrow three times. On bottom lands, the farmers should wait until the land is tolerably dry, say 8 or 10 days before plowing, to prevent caking, the soil will likely be soft and muddy. Irrigating bottom lands in the fall and plowing in the spring is found to be preferable. Grain should not be irrigated when too young or it will chill and turn pale, and the ground will become hard so that the grain cannot thrive. When irrigation is needed the grain will become a very dark green, and the leaves fall down and droop, and, soon after, red leaves will make their appearance at the lower end of the stalk. When the grain begins to head out, it should be thoroughly irrigated.

Bench lands should be irrigated four or five times a year, according to circumstances, but bottom lands rarely require two irrigations. The grain upon bench lands are not easily injured by too much water, but upon the bottom lands great care should be taken. W. H. M.

Remarkable Succession of Floods.

How To Prevent Destruction by Floods.

It is a notable fact that, for the past sixty years, commencing with 1812, and concluding with the present year, this continent has been regularly visited by deluging floods about every tenth year. In the winter of 1811-12 the valley of the Mississippi was flooded to such an extent that boats losing the channel, were drifted into the interior and stranded upon plantations, many miles away from the river. In 1822, ten years later, this coast was visited by the greatest deluge ever known here. In 1832 the valleys of the Ohio and Mississippi were visited by another memorable flood—in fact the waters of the Ohio, at that time, rose to a point never attained since. At the same time the Pacific coast was deluged, but not to such an extent as in 1822.

In 1842-'52-'62 and now in 1872 these pluvial visitations have occurred invariably at the close, or rather, at the beginning of every decade as can be proven by living witnesses.

The regular recurrence of this meteorological phenomenon should be enough to satisfy the most sceptical that astronomers and other scientists are correct when they affirm that disturbances upon the sun's photosphere, which occur about every tenth or eleventh year, also produce simultaneous disturbances in the electrical currents of the earth and atmosphere, thereby creating storms, tornados, earthquakes, typhoons and devastating floods.

If this be true (and the experience of sixty years, as well as philosophical theory, renders it at least plausible) we may reasonably expect the recurrence of a flood every tenth or eleventh year and predict its advent with as much precision as we can predict the phases of the moon, or changes of the season.

In view of the absolute certainty of these periodical floodings, it is the duty of people living in the valleys and on the margin of the rivers and creeks, in this State to adopt some plan to save their farms and gardens from being overflowed and ruined by the rivers. The chief source of destruction to valley lands bordering the streams, is the abrasion and wearing away of the banks by the swollen waters.

For some inexplicable reason, an American farmer never can learn the value of trees and shrubs. About the first thing he does after enclosing his farm is to chop down, grub up and burn up every natural tree, bush and shrub on the place. Now every rational person knows that a loose, loamy soil, such as we have in California, when not cemented and stayed by the roots of trees and shrubs must necessarily

crumble and wash away when attacked by rapidly running streams.

At a venture we suggest that the banks of all the streams in the country subject to abrasion be immediately planted with yellow German willow, or common basket willow of commerce. This shrub grows rapidly from cuttings; has an enormous spread of roots and the more it is cut off the wider it continues to spread. In addition to its being a strengthener of the banks against abrasion, it will, to some extent be valuable in the manufacture of wicker ware.

We merely suggest this as a starter without stopping to consider its practicability; at any event something should be done to save the land from abrasion by devastating floods, and that too quickly.

How to Keep From Freezing.

EDITORS PRESS:—I have heard of many persons throughout the mountains getting their hands and feet frozen while traveling; of course they are away from houses, or material for the speedy kindling of a fire, and before they can get to shelter or timber, frost does its work. Now my object in communicating this to the Press, is that a slight protection against such mishaps may receive a wide circulation, in mining localities situated far back in the mountains, where snow is the deepest, and cold intense. At South Pass, in the winter of '68, I tried the method, here given, and found it a good one.

Take an ordinary "Dark Lantern" and fasten it at the waist, in front of the person; have the coat, cloak, or blanket to cover it, so that if riding or walking the hands can be placed directly on it; have the vessel that contains the oil so fastened that it will not jostle about, even if you should jump up and down, or fall down. Use oil in burning.

The one I used was a small affair, and had a contrivance to close over and obscure the light, and also an arrangement fixed so that a belt could be passed through it, and around the waist, thereby holding it firmly in its place. It is then convenient for the hands, and in an extreme emergency it can be taken off and the feet warmed.

For persons who have a long distance to travel, a small canteen could be filled with oil, and slung over the shoulders, a supply would then be on hand to replenish the lamp or to aid in kindling a fire, if necessary. It is a fact that most persons are frozen, when out doors, while in the act of kindling a fire; the material is either damp, covered with snow and ice or a light cannot be struck; and it is frequently the case, that not until the last minute do they conclude to build a fire. With one of these dark lanterns—commonly called a "Bulls-eye"—and a little oil the traveler has constantly with him a fire. True, it is but a small blaze, but what a delight that blaze can create in the feeling of lost and cold travelers!

Another advantage gained by having along this little companion on a dark night, is that the sliding door can be opened, and the light's rays, concentrated through the thick glass in front, thrown along the pathway and the correctness of your route determined, or any obstruction laying in your way seen and its passage or removal accomplished.

The advantage of this little lantern cannot be fully understood, or rather appreciated until one is caught far from settlements in a cold dark night.

If I may, through these few instructions, be the cause of saving any one from freezing, the mere knowledge will be a pleasure to me through life. N. L. TURNER.

Ophir City, U. T., Jan., 1872.

RAIN BY MACHINERY.—The latest agricultural experiment in England is surface irrigation by artificial rains. This has been tried at Stoke Park, the surface experimented upon being a tract of twenty acres in grass. Every night, except when natural rains made it unnecessary, during the season of 1871, water has been applied in artificial showers. The apparatus consists of pipes laid in the ground, supplied from elevated reservoirs, into which the water is pumped by machinery. The following figures will show the result per acre: Interest (5 per cent) on cost of machinery and pipes, \$7.50; superstructure and fuel, \$7.50; manure, other top dressing, \$67.50; cost of harvesting, \$12.50; total expense, \$95. The value of the product of each is stated as \$200; the net profit is thus \$105; Land of the same character and in the same tract, not so irrigated, netted only \$45 per acre.

The Wheeler Expedition.

The Wheeler Exploring Expedition, sent out last spring to examine the country between the Pacific Railroad at Elko and Southeastern Arizona, has completed its labors; but the results of the expedition will not be properly known until communicated to the public by the publication of the official report at Washington. We have learned enough, however, to satisfy us that a large amount of valuable and interesting information has been obtained.

The expedition examined the topography of a district about seventy-five miles wide and six hundred long. Thirteen main topographical points were determined precisely, and many minor points approximately. The country from Elko to the Colorado was found not unfavorable for railroad purposes. In Arizona a considerable district occupied by hostile Apaches was examined and its topography communicated to General Crook. The mines along the route were carefully inspected and a large mass of information of an industrial character collected. The great cañon of the Colorado was ascended for sixty-five miles from its mouth.

The photographer was kept constantly employed, and has obtained views of all the prominent places. The San Diego Union says that when the results of the labors of the photographers are given to the public, a sensation will be created; for among the scenes he has portrayed by the aid of the camera, are some of the most grand and striking conceivable.

The report of the Mineralogist on the mining resources of the Territory of Arizona will show that the mineral wealth of that country has not been overestimated. The new silver mines recently discovered in the Pinal Mountains were examined, and Dr. Hoffman gives it as his opinion that they are unequalled by any mines yet discovered on this continent. The expedition will undoubtedly result in throwing more light on the history of the mysterious Aztec race. Many ruins never before heard of, were discovered by the explorers, and sketches and photographs of them made, and their surroundings carefully noted. The report of Lieutenant Wheeler, when ready, will only be equalled by a descriptive book from the pen of Dr. Hoffman. The former will possess statistics and information invaluable to the student, and the latter will be pleasing to the lover of stories of strange adventure in an almost unknown country.

THE COST OF EPIDEMICS.—The statistics of small-pox, as it has been raging in London, are frightful, and, all things considered, mortifying, since they show that man is such a fool that he cannot profit by the knowledge which Providence, or his own luck, vouchsafes to him. Notwithstanding the assured safety which vaccination offers, not less than 5,000 persons have died of the disease in London, while at least 100,000 have been maimed, disfigured and pauperized. The money cost to the metropolis of the epidemic has not been less than \$500,000. But this disregard of ordinary precautions is, perhaps, no greater, though it may, perhaps, be better defined than the recklessness which courts the advance of cholera by neglecting a few simple sanitary precautions. One would think that, as a race, we hated life, instead of loving it too well. Our theory is that to its preservation all other things must defer; the law allows every one to defend it, and hangs those who unlawfully take it; but for all this we go on risking it and losing it, as if we had ninety-nine existences at our disposal instead of one.—*Medical and Surgical Reporter.*

PARADISE VALLEY.—The farmers in Paradise Valley, many of them, are actively engaged in clearing new land, which will be sown with wheat the coming Spring. From all accounts, we are of the opinion that the farmers in Paradise will be almost, if not quite, able to supply this county with all the flour needed another year. The information will be gladly received, as in our judgment, the article now in market, from there, is superior to that generally manufactured in California. In other portions of the county, as well as Paradise, we learn of largely increased preparations being made for cultivating the soil—to be planted principally with wheat and barley.—*Ec.*

HEAVY WHEAT.—Culpepper county, Va., Farmer says, that from three quarts of the Touzelle wheat sown on one-tenth of an acre, he harvested five bushels, weighing 66 pounds to the bushel. It ripened June 1st, about eight days earlier than other varieties.

MECHANICAL PROGRESS.

Machine Puddling a Success.

No improvement in modern days has been more earnestly desired by the iron trade than a successful, practical machine puddler. The attainment of such an invention can not be considered of any less value than the Bessemer process of making steel. Various devices have been tried with greater or less success, the most promising of which have been based upon the principle of employing a rotary chamber in which to perform the work. Such devices have been tried both in this country and in Europe, and have been found perfectly practical with the single exception of the difficulty attending the procurement of a durable lining for the chamber.

During the past year, success in this important particular has been claimed by a Mr. Danks, of Cincinnati, who has devised a lining which is said to fully meet all reasonable requirements. Mr. D., after putting such a furnace into successful operation in Cincinnati, went to England, of which country he is a native, and explained his process in an elaborate paper, read before the Iron and Steel Institute. His deportment was such as to secure the confidence of that association to such an extent that it appointed a committee of experts to return with him and thoroughly examine into the merits of the alleged invention. This commission left England early in October last, taking with them about 40 tons of different kinds of English pig-irons, (such as they had unsuccessfully experimented with,) to be operated on as a crucial test. This commission has telegraphed to England, as stated in our issue of last week, that they had found the invention a complete success, a result which will at once insure its general adoption in England and on the Continent.

The Dank's Furnace.

Aside from its obvious general mechanical arrangement and construction, consists of rotating upon a horizontal axle one end of a chamber which communicates with a furnace in which the flame is urged by fan-blasts, and the other with a flue; this latter being closed by a detachable head while the apparatus is in use. The rotation of the chamber, duly charged with molten pig, of course insures the requisite movement of the metal, and consequently the results commonly obtained by the action of the puddler's tool. At the proper stage of the process, the head of the chamber is taken off, the flue moved aside out of the way, and a large fork suspended from a crane is thrust in. A few turns of the chamber then causes the ball to adhere to the fork, and the latter being withdrawn conveys the ball to the squeezing machinery. The method of lining this chamber is described as follows:

"The foundation for the lining consists of a mixture of pulverized iron ore and pure lime, worked with water into the consistency of a thick paste. Upon the completion of the initial lining, a quantity of pulverized iron ore, about one-fifth of the total amount required to line the apparatus, is thrown in, the furnace is heated and made to revolve slowly until the iron is found to be completely melted, when the apparatus is stopped. That part of the molten iron which has not been consumed by glazing the initial lining surface runs to the lowest level of the furnace, and there forms a pool, into which there are put a number of small and large lumps of iron ore of such dimensions as will be required to allow the said lumps to project over the surface of the liquid ore by from two to six inches. This part of the lining is allowed to set, when a fresh quantity of pulverized ore is thrown in. The furnace is again made to rotate slightly until the newly added ore is liquified, when the apparatus is again stopped, and the pool filled with lumps as before. The operation is continued in this way until the whole of the vessel is properly lined. From 2 to 2½ tons of iron ore are required to line a 700 lbs. furnace.

The London Mining Journal in alluding to the reported success of this invention, says: "The news appears too good to be true. The problem will, however, soon have its solution. We shall then know if in the United States there is at work a rotary puddling furnace which, although not very different from that with which Mr. Menelaus has been experimenting, yet

has distinguished itself with important difference of having been a success, while the British machine cannot be so regarded."

Our cotemporary has ere this found the "news" both "good" and "true," and the meeting of the Iron and Steel Association before whom Mr. Danks read his paper, already referred to, will become, as the *Journal* said it would, if the expectations thus raised were realized, "more memorable in the history of the iron trade than that meeting in Cheltenham, at which Mr. Bessemer read to the British Association his famous paper, will prove to the steel trade."

It thus appears that this American invention is destined to take its place foremost among the improvements adopted by the greatest iron-making country in the world. The real value of the principle is shown not only in the doing away of the severe manual labor in the puddling operation, but also in the production of larger balls at a single heat than could be done by the old method; in an increased economy of fuel, and a greater yield of iron from a given grade and quantity of ore. In the furnaces at Cincinnati, puddled balls ranging from 650 to 1,000 pounds are conveniently made, and no special difficulty appears to have been met with in forming into a single ball the product of a heat of 1,400 pounds.

The iron is charged into the furnace either in a solid or molten condition. When charged in the shape of pig-iron, the melting down occupies from 30 to 35 minutes, during which a partial rotation is given to the furnace from time to time in order to expose equally all sides of the charge to the flame. When the whole of this is thoroughly melted, the furnace is made to rotate only once or twice per minute during the five or ten minutes, in order to obtain the most perfect action of the cinder upon the molten iron. But this article has already become quite too long to admit of any further details of the process at this time.

PULVERIZED FUEL—A SERIOUS DRAWBACK.—An "eminent engineer," who has had some experience in the use of pulverized fuel, says that although perfectly successful at first, it grew gradually unsatisfactory from the glazing produced upon the flues, grates, etc.; the percentage of silex, etc., which in ordinary stoking and burning is carried off as slag and refuse, being carried against the throat, etc., brings on a vitreous diptheria which is fatal to the flues. It is intimated in reply that in the use of this kind of fuel, much will of course depend upon the character of the material. If the refuse is easily vitrified, then the result described may possibly occur; but, if the refuse is not easily vitrified, it will be carried out of the chimney in the form of dust. Pulverized fuel has been successfully used by several establishments for a year or more, and is no doubt the most economical way in which coal can be used, when the objection above referred to does not interpose.

IMPROVED CONSTRUCTION OF SHEET-IRON STACKS.—Sheet-iron stacks, especially for heating and puddling furnaces, are now being made in separate rings, instead of one whole length as formerly. Each ring has a band of flat bar-iron—horseshoe bar—about two inches from the lower edge, firmly riveted, and by which each is supported as it fits into and rests on the edge of the one next below. By making the stack in this way in short sections, it can be more conveniently erected, and also can be repaired by renewing any worn-out part or burnt section at less cost and much less labor than when otherwise constructed.

SPEED OF OCEAN STEAMERS.—The steamship *Oceanic*, of the new "White Star" line, during a late trip from New York to Liverpool, ran 384 knots in a single day, which is spoken of by some of the newspapers as being the greatest distance ever made in twenty-four hours. This, says the *American Artisan*, seems to be a mistake, for we find by reference to our records of the passages of steamers, that the *City of Baltimore*, of the "Inman" line, ran 385 miles in twenty-four hours, in the year 1866.

IRON SHIP-BUILDING IN THE UNITED STATES.—No iron ships were built in the United States in 1867. In 1868 six small vessels were constructed, having an aggregate of 2,800 tons; in 1869 ten were built, of an aggregate of 4,584 tons; in 1870 fifteen, with an aggregate burthen of 8,281 tons; and in 1871, up to the middle of November, twenty were constructed, measuring an aggregate of 15,479 tons. Of the twenty iron vessels built during the year ending January 31, 1871, nineteen were steamers.

SCIENTIFIC PROGRESS.

The Force of Life.

There have been writers who affirmed that the pyramids of Egypt were the productions of Nature. We now regard them as the work of men's hands, aided by machinery of which no record remains. The blocks in this case were moved by a power external to themselves, and the final form of the pyramid expressed the thought of the human builder.

Let us pass from this illustration of building power to another of a different kind. When a solution of common salt is slowly evaporated the water disappears, but the salt remains behind. At certain stages of concentration particles, or molecules, as they are called, begin to deposit themselves as minute solids, so minute, indeed, as to defy all microscopic power. As evaporation continues, solidifications goes on and we finally obtain a mass of salt of a definite form.

What is this form? It sometimes seems as a mimicry of the architecture of Egypt. We have little pyramids, terrace above terrace forming a series of steps resembling those of the pyramids. The human mind is as little disposed to look at these little salt crystals without further question as to look at the pyramids of Egypt without inquiring whence they came. How, then, are those salt pyramids built up?

Guided by analogy, we may suppose that swarming among the constituent molecules of the salt there is an invisible population, guided and coerced by some invisible master, and placing the atomic blocks in their positions. This, however, is not the scientific idea, nor do I think your good sense will accept it as a likely one. The scientific idea is that the molecules act upon each other without the intervention of slave labor; that they attract and repel each other at definite points, and in certain different directions, and that the pyramidal form is the result of this play of attraction and repulsion. While then the blocks of Egypt were laid down by a power external to themselves, these molecular blocks of salt are self posited, being fixed in their places by the forces with which they act upon each other.

I take common salt as an illustration, because it is so familiar but almost any other substance would answer equally well. In fact, throughout organic Nature, we have this structural energy ready to come into play. It is present everywhere. The ice of our winters and of our polar regions is its hand-work, and so equally are the quartz, feldspar and of mica of our rocks. This tendency of matter to organize itself, to grow into shape, to assume definite forms in obedience to the definite action of force, is all-pervading. It is in the ground on which you tread, in the water you drink, in the air you breathe. Incipient life, in fact, manifests itself throughout the whole of what we call inorganic Nature.

The forms of minerals resulting from this play of forces are various and exhibit different degrees of complexity. Men of science avail themselves of all possible means of exploring this molecular architecture. For this purpose they employ as agents of exploration, light, heat, magnetism, electricity and sound. Polarized light is especially useful and powerful here. A beam of such light, when sent into the molecules of a crystal, is acted on by them and from this action we infer with more or less clearness the manner in which the molecules are arranged. The difference, for example between the inner structure of a plate of rock-salt and a plate of crystallized sugar is thus strikingly revealed.

And now let us pass from what we are accustomed to regard as a dead mineral, to a living grain of corn. When it is examined by polarized light, chromatic phenomena similar to those noticed in crystals are observed. And why? Because the architecture of the grain resembles in some degree the architecture of the crystal. In the corn the molecules are also set in definite positions, from which they act upon the light. But what has built together the molecules of the corn? I have already said, regarding crystalline architecture, that you may, if you please, consider the atoms and molecules to be placed in position by a power external to themselves. The same hypothesis is open to you now. But, if in the case of crystals you have rejected this notion of an external architect, I think you are bound to reject it now, and to conclude that the molecules of corn are self-posited by the forces by which they act upon

each other. It would be poor philosophy to invoke an external agent in the one case, and reject it in the other.

But, I must go still further, and affirm that in the eye of science the animal body is just as much the product of molecular force as the stalk and ear of corn, or as the crystal of salt or sugar. Many of its parts are obviously mechanical. Take the human heart, for example, with its exquisite system of valves, or take the eye or hand. Animal heat, moreover, is the same in kind as the heat of a fire, being produced by the same chemical process. Animal motion, too, is directly derived from the food of the animal.

As regards matter, the animal body creates nothing; as regards force, it creates nothing. Which of you by taking thought can add one cubit to his stature? All that has been said regarding the plant may be re-stated with regard to the animal. Every particle that enters into the composition of a muscle, a nerve, or a bone, has been placed in its position by a molecular force; and unless the existence of law in these matters be denied, and the element of caprice be introduced, we must conclude that, given the relation of any molecule of the body to its environment, its position in the body might be predicted. Our difficulty is not with the quality of the problem, but with its complexity; and this difficulty might be met by the simple expansion of the faculties which man now possesses. Given this expansion, and given the necessary molecular data, the chick might be deduced as rigorously and as logically from the egg as the existence of Neptune was deduced from the disturbances of Uranus, or as conical refraction was deduced from the undulatory theory of light.—Condensed from a lecture by Tyndall.

Iron Electrotypes.

The art of electrotyping, says a contemporary, already applied to myriad uses, shows constant evidence of progress, especially in the successful deposition for practical purposes of metals that have hitherto been considered intractable. Nickel-plating is now common, and, while cheaper, is for some purposes superior to silver; and there is some reason to suppose that by the employment of a small percentage of some other metal to diminish the brittleness, the rather refractory nature of the nickel coating may be brought more completely under the control of the burnisher, in lieu of the polishing wheel, than is now the case.

There are many purposes, however, for which a plating of iron would be, all things considered, better than any of those now familiar in electro-metallurgy; and to secure this has occupied the attention of some foreign experimenters, who have, apparently, been very successful in their efforts.

At the late London International Exhibition (1871) were exhibited bank-note plates, medallions, and a page of printing-type, electrotyped in iron, by a process devised by M. Eugene Klein, who is at the head of the Chemical Department in the Imperial State Paper Manufactory in St. Petersburg.

The advancement of the iron electrotype to a practical success has not been accomplished without the expenditure of much thought and experiment, and many difficulties have had to be surmounted; but the scientific interest which attached to the new development, and the eminently useful applications of which he saw it was susceptible, especially in the departments of engraving and printing, stimulated M. Klein to continue his experiments, against what appeared to be almost or quite insurmountable hindrances.

His starting point was the steeling of engraved copper-plates, which process was effected in a bath composed of chlorate of ammonia and iron, to which he added a small quantity of glycerine. On leaving the bath the iron is as hard as tempered steel and very brittle. Reheated it loses much of its hardness, and becomes malleable at cherry red, when it may be cut with the graver as readily as soft steel.

Of the importance of the practical application of the process there can be no doubt whatever. By replacing plates of copper by those of iron, greater facilities will be afforded for producing publications, works of art, and especially bank-notes and checks. Iron electrotype plates are found to be almost indestructible in the process of printing, while copper soon wears out—much sooner, in fact, than wood. A late issue of *Engineering* gives in detail the experiments through which this important process has advanced to a condition of high practical value.

HORTICULTURAL.

Tanyah, or Calladium Esculentum.

[Written for the Press, by E. J. Hooper.]

In the 9th of Dec. number of the PACIFIC RURAL PRESS I wrote a paper descriptive of a vegetable called by the Indians, "Tanyah," now being cultivated in the Southern States for the sake of its tubers, and considered there of but little less value than the Irish potato. I wrote to a friend, B. F. Hills, of Areola, La., (who sent me two plants of it,) to give me a more minute account of the plant than he at first sent me. He has written to me lately as follows: "It requires the same culture and mode of preparing it for the table as the Irish potato, except it should not be boiled in an iron vessel as it gives it a dark color. Peel it and slice it up as you would a long turnip, cook until soft, mash it fine, and season to taste; put it in a dish, set it in the oven and brown it. It is then more like the vegetable oyster than any vegetable I can think of. When mashed fine mix in a little milk, flour and eggs, and fry it as you would batter cakes, or make it in a pudding or pie as sweet potatoes are sometimes done. As to its culture, prepare the ground as for the Irish potato, but keep the plant a little below the level of the ground—I mean not on a ridge—as it grows best in moist situations, and becomes more rich and thrifty. Plant the small tubers if you wish to increase the crop rapidly. Cut the large tubers as you do the Irish potato, with an eye on each piece. I saw an article in some of the works, stating that the stems of the leaves were a good substitute for asparagus, but I have not tried them. The leaf is handsome, shaded with light and deep green, and beautifully grained. I have measured leaves here three feet long and two feet wide. If any of your nurserymen wish it, I will send them plants in exchange for some they may have that I would like, such as the Fisherzagos raisin grape, or the Zante enrrant."

This plant is considered of sufficient importance as a good vegetable to be advertised among the list of vegetables in D. R. Bliss and Son's Catalogue, N. Y. It would be well adapted for the climate of California, I think, if properly irrigated.

Fruit Production.

Some statistics of the fruit production of California, lately published in a public journal of this city, though purporting to come from a house extensively engaged in the fruit business, are so inaccurate that they must mislead persons in search of information. We are told that 2,801,000 lbs. of apples, 4,754,750 apricots, 1,748,250 of cherries, 9,464,000 of peaches, 13,598,000 of pears, 511,000 of plums, 1,181,000 of quinces, 1,126,000 of figs, 42,000,000 of grapes, 1,402,000 of blackberries, 1,331,500 of currants, 131,000 of raspberries and 24,825,000 of strawberries were "produced" by California in 1871. These estimates include all the counties, and after an examination of the figures they appear to us to possess no value. Sierra, for instance is credited with 50 tons of figs, Mono 5 tons, Plumas 6 tons and Sonoma 10 tons; whereas the last county produces ten times as many as the three mountain counties named. According to the Assessor's reports, Sonoma has 1,300 fig trees, Sierra 11 and Mono none. El Dorado and Plumas are each credited with producing 75 tons of grapes, San Bernardino 25, and Sierra 150. The State statistics tell us that El Dorado has 1,357,895 grape vines, Sierra 9,600, and San Bernardino 481,450. A slight acquaintance with the climate of Plumas, Mono and Sierra, with the State statistics were not accessible, would satisfy any enquirer that those counties could not rival Sonoma, San Bernardino and El Dorado in growing grapes and figs. We could find many other mistakes equally grave, and the statistics, as a whole, are unworthy of trust. Estimates carefully prepared by well informed persons are often valuable when precise statistics are not obtained.—*Alta*.

MANURING TREES.—It is a mistaken notion that many have of applying all the manure and water close around the foot of their trees. The roots run off a distance in search of nourishment; and moreover the roots near the body of the tree have much less facility for taking of nourishment than those at a considerable distance.

Santa Clara Valley Farmers' Club.

Movement About Road Laws—Agriculture, Horticulture, Etc.

In this county great dissatisfaction exists, especially among the country people, in relation to the present system of assessing, collecting and expenditure of the road tax. Under the existing law the road tax is assessed to all tax payers alike, whether they be residents of town or country, and when collected, is placed as a special fund under the immediate control of the Board of County Supervisors. The Board has the power to make appropriations from the fund to each road district in the county, and to appoint road masters for the same. Our farmers complain that this appointing power of the Board not only leads to a species of favoritism, but that the distribution of the fund is unequal and injudiciously applied. Yesterday, there was a full attendance of the "Farmers' Club," in this city, and the road question monopolized almost the entire time of the session.

Speeches were made by several leading members of the Club. Various suggestions and propositions were made and advanced. The central idea seemed to be that a radical change in the road system must be made immediately, and the plan finally adopted was that a committee be appointed to obtain signatures to a petition to our legislative delegation requesting them to use their endeavors to have our road law so amended that each road district shall have the power to elect its own road master, and also to assess and collect road taxes sufficient to keep the roads in repair inside of its own limits.

As your correspondent understands it, the idea of the Club is not to entirely abolish the special county road fund as it now exists, but that each District Supervisor being elected for his competency, and being fully cognizant of the immediate necessity for road improvements in his own neighborhood, can at once do the work without being dependent upon the Board of Supervisors. A committee was appointed to draft resolutions, and also a committee to circulate the petition for signatures, both of which will report at the meeting on next Saturday.

The Santa Clara Valley Agricultural Society is considering the most feasible and profitable plan or plans for improving and beautifying the Fair grounds. The Society some time since advertised for sealed proposals, to be reported at the last regular meeting. Certain proposals were made at that time, but the whole matter was continued till Monday evening next (15th inst.), when some final action will probably be taken.

Our Farmers

All wear smiling faces, feeling assured of a bountiful harvest this year. Money is tolerably plenty in private hands for loan at from 1% to 1 1/4 per cent., and is being readily taken by farmers and business men, for the reason that the late bountiful rains has raised the hopes and expectations of everybody and restored public confidence. Farm lands in this valley which, a year ago, were almost begging for buyers at reduced prices, cannot now be purchased or rented at any price, the owners preferring to cultivate every acre themselves.

It would do good to the eyes of our metropolitan friends if they could just now take a peep at our splendid horticultural surroundings. The drenching rains have washed every vestige of dust from the leaves, and the plants and trees are bright and beautiful. In a spacious enclosure near the "New York Exchange," the veteran gardener, Mr. William O'Donnell, who has been engaged in horticulture here for seventeen years, has a miniature park containing every variety of plant, shrub and tree to be found on this continent. Mr. Charles Caine has another splendid collection of the same sort near McLaughlin & Ryland's Bank, on Santa Clara street.

Taking it all in all, we have not enjoyed such an auspicious season for many a year, and we devoutly hope that no untoward event may blast our expectations.

GOPHER LAW REPEALED.—It having been hinted that certain persons were about collecting scalps from the millions of drowned gophers which had been unceremoniously taken off during the late heavy rains, and claiming bounties therefor, the Legislature has put an effectual stop to any such speculation by repealing the law.

FARM HINTS.

Apples for Feeding Animals.

H. H. Doolittle of Oak's Corners, N. Y., gives to the *Rural New Yorker* a statement of his experiments in feeding apples to horses, cattle and swine. The price for apples being low in market last autumn, he used them to advantage in this way. He took care to give to his animals good sound fruit, and not such as was partly rotten or partly frozen. His two horses were kept in good condition, and well fitted for work, which could not have been attained for less than \$15 worth of grain. Two breeding sows were kept as well as they could have been on \$5 to \$10 worth of grain; and three spring pigs were well fattened on apples at a saving in grain of about \$10. The pigs were also tried with boiled apples and a little meal, but they liked the raw apples best. Cows were fed mostly on whole apples, there being none small enough to choke them. A milch cow was increased in milk at least fifty per cent., which made excellent butter. She fell away one-half in yield on changing the apples to sliced turnips, buckwheat shorts and corn stalks. The loss was partly restored by changing the turnips and shorts to half a bushel of apples daily. The apples in the experiment were regarded as worth from \$5 to \$10. A dry cow was handsomely fattened on apples—worth from \$15 to \$20.

The apples fed in this way, were a crop of about 50 barrels of Greenings, and one-half as many more of second quality, besides a few others intended for family use—all worth at current prices at that time not over \$50. According to the statement in the experiment, from \$50 to \$65 were obtained for them as food. It also furnishes corroboration of the statements we have made in former years, that rich sour apples are scarcely inferior to sweet ones for this purpose. The flow of milk from the cow, from October 1st to November 10th, was two-thirds as much as on good June feed.

A Variety of Crops.

Mixed husbandry has two great advantages, it gets the benefit of all the land has to bestow, the various crops drawing upon the various materials of the soil. Hence a greater length of time can be covered without replenishing the land, though it is better to feed liberally and constantly. Second: In the variety of produce there are always some products that will sell well even in the worst of times, while there is less loss in the poor prices where but a small quantity is sold. In this way there is no loss, but always a gain; not a fortune realized (nor a fortune lost), but fair, moderate profits secured.

This is safe farming, just as in speculation the man who is content with moderate profits is the safe speculator, prosecuting his trade when others fail.

The beauty is to make the whole soil work, nothing lying dormant, useless, for whatever fertility the farm has unused, it must always be remembered, is so much loss in interest, and in the use of profit. But, as we have said, the farmer is safe and in these critical times this is of the first importance. Have many things to sell, rather than one of a kind largely, which—though many chances are against it—will sell at a low figure, which any of our thinking farmers know is not the figure that pays, for, remember, every penny not every every dollar we will say, but every penny gained in selling is so much clear gain. Have a variety then, to be sure to get this clear gain.—*Country Gentleman*.

WOOD ASHES FOR WHEAT.—A subscriber sends us the following as his experience in using wood ashes, viz: that in quantities of only eight bushels per acre, they have a marked effect; that they push the wheat forward several days, thus getting it ahead of that critical period when it is so apt to be attacked by rust, that they strengthen the stem and increase its solidity. All of which and much more, we can readily indorse. In fact, ashes are an excellent application for an orchard.—*American Agriculturist*.

HOW TO IMPROVE MUSTY WHEAT.—A correspondent of the *Rural New Yorker* had a lot of wheat get musty in a pile. He says: "I put it on my hop kiln, dampened it slightly with water, put a fire under it with brimstone on the stove. When it cooled off, I found the mustiness had entirely left it. We tried it for bread, and it made as good as any wheat."

WHEN TO MANURE TREES.—Inquiry is often made as to the frequency and amount of manuring or cultivation for trees. The answer must be: Act according to circumstances. The question again recurs: How shall we know what our soils need? The answer is: Observe the results of growth. An examination or analysis of the soil will be of little use. But the trees will tell their own story. If the soil is so rich that they make annual shoots of two or three feet or more in length, without any cultivation or manuring at all, (which, however, is rarely the case) then it will be needless to give additional care. The annual growth is the best guide to treatment. There are very few apple or other orchards which, after reaching a good bearing state, throw out annual shoots more than a foot and a half long, and many not half this length. The owner may lay it down as an unalterable rule, that when his trees do not grow one foot annually they need more manuring or cultivation, or both. By observing the growth he can answer questions of the kind referred to without difficulty.—*American Fruit Culturist*.

Manure should never be placed in contact with the roots of a tree in setting it out; and old, finely pulverized earthy compost should always.

CABBAGES FOR STOCK.—Commenting on the subject of raising cabbages for stock, the *New York World* remarks, that in England they grow thirty tons per acre of the ox or drumhead cabbages, against 18 tons of Swedes of 22 tons of Mangles; and according to Dr. Volcker, cabbages contain nearly three times as much flesh-forming substance as common turnips, and are equal to almost all clovers and grasses as food for stock. They are much better for lambs and milch cows than any kind of turnips and they are much better relished. Cabbages can only be grown to profit on a very rich and highly manured soil; and the same applies strictly to the Indian corn crop. It is probable that cabbages are a much surer crop in the cool, moist climate of New England than in our hotter summer.

SALT AND CHARCOAL FOR STOCK.—Farmers who raise stock should give them plenty of charcoal to eat, and furnish them freely of salt. Both improve cattle and keep them in good condition. Salt acts healthily on the blood; charcoal strengthens and heals the mucous membrane throughout the alimentary canal, and increases the power of the digestive organs, healing any unhealthy condition existing there. It prevents worms generating in the stomach, etc.; it absorbs the putrescent gases by which worms are generated, and they consequently die. The free use of salt and charcoal will contribute to protect cattle from epidemics, and will counteract the effects of putrescent or septic water.

FARM MACHINERY.—In reply to a young farmer who asks, "Will farm machinery pay at first?" Mr. Harris replies in the *American Agriculturist*:

"I should buy as little machinery as possible. I asked a farmer who has had considerable experience with machines if they paid. 'If bought with good judgment,' he replied, 'and used with great care, I think they do.' A farmer can lose more by using a broken, one-tined fork, a dull hoe, a worn out axe, and a battered-up spade, than he can save by using a machine to saw wood or a reaper to cut his grain. A small farmer had better hire his work done with a machine than to buy the machine himself."

HOW TO SELECT PECAN NUTS FOR PLANTING.—The *Memphis Farmer*, in recommending the pecan tree for cultivation says: Select best Texan pecans, largest and thinnest shells, and plant in December, January, or February. By transplanting carefully every two years (cut off tap root first year), for two or three times, they will fruit in eight or ten years, and when 15 years old will bear a bushel each; when fully matured, one or two barrels of the best, worth generally \$20 to \$30 per barrel. Plant, say 30 feet apart, and leave to your children a snug income.

ALTHOUGH, almost ever since agriculture has been practiced soot has been known to be a valuable manure, in the nineteenth century there are hundreds of farmers who cannot be persuaded to believe it. It is really as valuable as guano. Take a hog-head of water, and dissolve it in twelve quarts of soot, and you will have a splendid liquid manure for plants. Apply it to the roots, of course, and then watch the result.—*Journal of the Farm*.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.—*News*, Jan. 12: GRASS.—Farmers say that the cold weather of the past few days checked the growth of grass, and that it will be some time yet before there will be good food for cattle. Holders of hay will have opportunity enough to sell before new grass becomes plentiful for stock.

SALT WORKS.—It is reported that during the late storms the salt works at Alameda were badly damaged, the beds being covered with loam and sand. One man lost 1,560 tons of salt and other owners about 1,000 tons.

MUSHROOMS.—Mushrooms are plentiful in market and range in price from 8 cents to 50 cents per lb., the latter for choice cultivated.

LOS ANGELES—The *News* reports that Los Angeles county last year made 1,230,000 gallons of wine and 50,000 of brandy, against 1,064,000 of wine and 59,600 of brandy in 1870. The cost of the wine per gallon to the makers is estimated at 15 cents. One firm has already made 28,000 gallons of brandy, and will make 10,000 more. Raisins of last year's crop have made their appearance in the market, but in a small quantity. The grapes suitable for raisins command prices so high that there is not much inducement at present for buying them.

The crop of oranges and lemons in Los Angeles county this year is fully up to the average, both as to quantity and quality.

MARIN.—**FRUIT IN MARIN.**—During the year 1871 there have been produced in Marin county 750,000 pounds of apples, 14,000 pounds of apricots, 20,000 pounds of blackberries, 10,500 pounds of cherries, 5,000 pounds of currants, 2 tons of figs, 50 tons of grapes, and 10 tons of nectarines. These figures are supplied by Lusk & Co., the well known fruit dealers of San Francisco.

NEVADA—*Republican*, Jan. 10: The ranchmen in the lower portions of the county have sown more than their usual quantity of grain, and propose to sow more as soon as the storm abates. We hear of several new vineyards that are to be planted early next spring, one of which is to contain 20,000 vines—the most in any single vineyard in the county, if we remember right. The silk growers are also making preparations to add largely to their mulberry plantations this year, and experiment more extensively in raising silk-worms and cocoons. Indications of a change for the better in the county are more favorable than they have been for ten years. Things have a hopeful, permanent appearance. It is rare we hear a resident of the county talk of leaving for some other locality expecting to better himself. That Nevada county is going to take a fresh start and increase rapidly in population, we do not mean; but we believe it has seen its darkest days of adversity, and that henceforth it will increase slowly and surely in population and wealth.

News, Jan. 14: We understand that Ed. Muller, of this city, proposes to publish a pamphlet on silk culture. Mr. Muller is one of the pioneers in the business and has made it a study for years. His exhibitions at the State Fair have taken high premiums, and his displays have been praised by the press of the State. His experience renders him thoroughly qualified for the work suggested, and such a pamphlet would be valuable to those engaged in the business in this State.

SANTA CLARA.—*Gilroy Advocate*: OUR TOBACCO INTERESTS.—We have on a number of occasions called attention to the operations of our townsman, J. D. Culp, in raising and manufacturing tobacco. A year ago he purchased a splendid farm in San Felipe valley, from Mr. E. A. Sawyer, and last spring put in a crop of tobacco, five acres of which was planted to Havana seed. From these five acres he has gathered and cured a crop of 8,000 pounds of fine Havana tobacco. Samples have been submitted to every leading tobacco man in San Francisco, and all have joined in a certificate that it is equal to that raised on the island of Cuba. To cure Havana tobacco raised in this country so as to preserve the peculiar flavor and qualities of that imported from that island has always been the acme of the hopes of all our tobacco growers, and millions of dollars have been expended in various efforts which have heretofore been fruitless. The plant could be raised and matured in this

country as readily as on that island, but no one ever could cure it so as to preserve its delicate flavor. One company experimented in Florida some years since, and sunk several hundred thousand dollars in their efforts. They procured the young plants in Cuba and brought them over to their plantation in vessels and failed. The next year they not only brought over their plants, but imported ship loads of the soil from that island, which they placed around the plants and still they failed in attaining their object—and finally gave up their enterprise in disgust. The value of Mr. Culp's discovery may readily be appreciated when we state that the tobacco imported from Havana is worth in San Francisco from \$1.12½ to \$2 per pound, to produce the same article here. The supply of tobacco raised in Cuba is limited and not equal to the demand; the best grades of tobacco raised there are manufactured into cigars on the island and we only get, even at the enormous price paid, an inferior quality. California has every natural advantage for becoming the greatest tobacco producing country in the world. The richness of the soil and mild climate, together with the certainty of dry weather when the crop is being cured, are advantages that cannot be surpassed.

The annual meeting of the Santa Clara Valley Agricultural Society was held on the 4th instant. The following named officers were elected: President, W. C. Wilson; Vice-Presidents, Cary Peebels and J. P. Sargent; Secretary, Givens George; Treasurer, C. T. Ryland; Directors, William O'Donnell and S. B. Emerson. The total receipts for 1871 were \$10,720.90, and the expenditures amounted to \$8,346.95, leaving a balance on hand of \$2,373.95.

The Guide, Jan. 15: FARMERS' CLUB.—The Club met yesterday afternoon with a good attendance. The Road Law subject was discussed in all its bearings, and the interest manifested showed that the members feel deeply the necessity of a revision by the Legislature, of the present law. The idea of having each district make and maintain its own roads and regulate its own taxes, seemed to meet with general favor. Several reports on the matter were read, and the subject continued until next meeting, when it will assume a more definite shape. In connection with the reading room, a library has been added, and donations of books received. These meetings are growing rapidly into favor, and with the present encouraging financial condition of the Club, there can be no doubt but that it will be a permanent institution.

SANTA CRUZ.—*Sentinel*, 6th: CALIFORNIA RAISINS.—G. M. Jarvis, of the famous Vine Hill Vineyard, has prepared and boxed, from this year's vintage, several thousand pounds of raisins, from the choice Burgundy grape, which surpass in flavor and excellence any brand of foreign raisin in market. This is a new feature with the grape growers of this county, and from the successful experiments of Mr. Jarvis this season, promises to become extensive and profitable. This luxury can now be supplied by the home product at a greatly reduced price. Six-pound boxes selling for \$1.25. There is no reason why tons of superior raisins could not be prepared next year in this county, thus turning out valuable vintage in a more profitable and desirable account than wine making. Mr. Jarvis will be enabled, from his extensive varieties, next year, to prove which are best suited for raisins. From Mr. Jarvis' vineyard a great many tons have been sold throughout the county for table use, several tons turned to raisins, and over 20,000 gallons of wine made from the best varieties of foreign grape. Several thousand gallons of superior wine vinegar has also been manufactured from the refuse pulp this season.

WINE PRODUCT.—In our brief mention of the wine product of this county, some three weeks since, our figures did not show, as we intended they should, the amount of wine produced for 1871. The error was typographical, and we now make the correction. The production instead of 25,000 gallons should have been 65,000 gallons. The Jarvis Brothers alone have made about 35,000 gallons and other vineyards in the Vine Hill region have produced 10,000 gallons more. It is a very small estimate, to say that the product of 1872 will exceed 100,000 gallons. With the railroad completed to Santa Cruz, carloads of grapes could and would be shipped direct from here to the East; this might reduce the wine production a trifle.

We learn that a large number of persons are preparing to plant the vine this year,

in the foothills adjacent to Santa Cruz and Soquel.

The hills are now clothed in the beautiful green peculiar to the country bordering the ocean. Another month and the flowers will be as plenteous as the green blades foretelling their approach.

SACRAMENTO.—THE DAMAGE TO SHERMAN ISLAND LEVEE LESS THAN REPORTED.—In regard to the break on Sherman Island, which has flooded a portion of the island, I understand that it will be closed to-morrow. The expense of filling the break ought not to exceed \$500. The people on Sherman Island are not concerned as to their safety or the success of their reclamation. The water on the island will not cause any loss of crops or stock, and will soon be drained out by the action of the tides.

I have recently examined all the principal levees on the Lower San Joaquin and Sacramento rivers, and although there are some of the smaller levees covered by the water, I have seen no damage to any that would exceed a few hundred dollars. In fact, it is a question whether or not the land will not be more benefitted than damaged by the floods. The sediment deposited on Grand Island, by the present flood, will amount to several inches, and some of the lower places much more. This will more than compensate for the damage done the levee. As the public are interested in learning the facts in regard to this enterprise, and as the statements of the *Call* were evidently made with undue haste, and without fully understanding the matter, I will be obliged by your publishing this. Yours,

WM. C. WALKER,
Superintendent T. L. R. Co.

January 16th.

[Mr. Upham, of Sherman Island, informs us that the break was closed as anticipated above, with little or no damage to the growing wheat, as the daily low tides in the Sacramento and San Joaquin rivers admits of rapid drainage of the surplus water. Sherman Island is all right and ready for another trial, if it must come.—*Eds. Press.*]

BET SUGAR.—The *Sacramento Bee* says: The Sacramento Sugarie has on the way by rail, to arrive in a few days, 200 bags of sugar beet seed, direct from Germany, all of which they will sow. The Alameda Sugarie will sow largely also; and it is announced that a beet sugarie is likely to be erected this year upon Sherman Island. California wants several hundred of these institutions, and there is some prospect that in a decade she may have them.

SAN JOAQUIN.—*Stockton Independent*: VERY ENCOURAGING.—The reports received from all portions of this valley lead us to believe that the farmers will the coming year be able to make up for a portion of their losses during the last two dry seasons. An uncommonly large area was seeded before the commencement of the heavy rains, and owing to the fact that the weather has continued warm there has been nothing to delay its growth. The season is particularly favorable for the farmers on the west side of the San Joaquin river and those cultivating the sand plains. The adobe and bottom lands will be too wet for cultivation for some time to come, but these lands will produce a crop even if sowed much later. Although we have had an almost unprecedented rainfall during the last two weeks, we have heard of but little damage by floods. Had there been large quantities of snow in the mountains the result would probably have been different; but now the land has been thoroughly saturated without any disastrous flood. The prospect for a large crop throughout the State was never better at this season of the year, and our farmers are generally jubilant in consequence.

We had a conversation a few days since, with an extensive owner of cattle on the subject of the Fence Law. He informed us that, until quite recently, he had been decidedly opposed to its repeal; but, being convinced that it was inevitable, he had been led to carefully investigate its probable effect on his interests, resulting in the belief that it would prove favorable. The law had, at one time, undoubtedly been beneficial to the cattle interests, but had now ceased to be so. It had resulted in overrunning the country to such an extent that they were mutually eating up and destroying each other. Cattle were deteriorating and perishing in vast numbers from starvation every year, and it was vain to think of bringing about any concert of action by which their numbers could be reduced within the sustaining capacity of the country. No Fence Law would bring about that result and a healthy condition of a great interest. The man of enterprise

could improve his breeds, and no longer suffer the pain of witnessing their constant degeneration. The owners of land, either as a stock raiser or farmer, would derive a benefit from it; the country would improve and better markets open.

TULARE.—A correspondent, J. B. R., sends us the result of his observations for the months of November and December as follows:

The average of thermometer for November at 6:30 o'clock A. M. was 57°; at 2 P. M. it was 64½°—the coldest being 38°, and warmest 76°. The rainfall .20 inches on 26th, .76 on 27th, and .64 on the 29th, making a total of 1.60 inches for the month; which coming so late and so well together gave the grass a fine start. By the middle of December the plains were green, and barley up. From Dec. 4th to 12th we had an unusual amount of fog, which was an advantage. The average of thermometer was 46½° at 6:30 A. M., and 55½° at 2 P. M.—the warmest being 70°, and coldest 30° on the morn of 14th, when we had a heavy frost, cutting down tomatoes, beans, and potatoes, which might otherwise have been growing until now, as is shown by a few that came up since. The rain for December was .35 inches on the 18th, .05 on 19th, .70 on 20th, .20 on 21st, .30 on 22d, .45 on 24th, .15 on 28th, .87 on 27th, .03 on 30th, making a total of 3.60 inches in the month, or 5.40 inches this fall. The soil is wet down about 15 inches. Farmers have quit feeding and turned stock out to pick a living; though the grass is rather short it is improving rapidly. We have potatoes planted, peas in bloom, and vegetables coming on finely. We have been circulating petitions in favor of no fence law, and find plenty ready to sign who voted for fence; they have been thinking since election and would vote different now. Some are waiting to hear of the passage of a general trespass law, intending in such case to sow all the grain they can upon the plains. I would like to enquire if grapes are raised, and do well without irrigation, on the red hills around Auburn, or on similar soil elsewhere.

MONTANA.

Independent: GRAIN.—The prospects of this Valley becoming one of the centres of the Territory for agriculture is very good. There will be a much larger area of grain sown the coming season than ever before. No part of the world produces larger crops of grain than Deer Lodge Valley, and there is a good home market for all that is raised. Until recently but little attention has been paid to farming as the raising of stock was more profitable. In the future ranchmen will pay more attention to cereal crops which will materially advance the prosperity of the country. We shall soon be enabled to produce all the farm products we consume.

There is a wonderful scarcity of eggs in this market at the present time. They readily command \$2 per dozen. From some cause they are always much dearer here than in any other place in the Territory. It occurs to us that if some of our ranchmen were to turn their attention to raising poultry they would in a short time realize handsomely from the outlay required. Eggs command an average of 75 cents per dozen the entire season, and for the past year the average has been about 85 cents. Chickens will average about one dollar apiece. We do not pretend to know the cost of raising chickens in Montana, but judging from what it costs to raise them in other countries we think it might be made quite profitable.

WASHINGTON.

STOCK DYING.—The *Victoria Colonist* of the 6th, says the most alarming accounts continue to reach us from the interior of the mainland. The thermometer at William Lake has fallen to fifteen degrees below zero, and the snow, which had previously begun to thaw, was covered with ice. The poor animals, consequently are unable to get feed and are dying by scores. Large numbers of pack-horses and work-oxen have already died for want of feed. Oregon Jack, on the Thompson river, is getting three cents a pound for straw. Corn-well and other large farmers have no hay or grain. There is no feed at Yale. The town is full of pack-animals, many of which are dying. They were driven down to Yale in the hope of getting transportation to Sumas, but the steamer Hope, owing to the ice, is unable to reach Yale and the result, it is feared, will be a terrible loss.

SCARCITY OF FEED.—Under this caption the *Walla Walla Statesman* of the 16th ult. says: We learn that there is comparatively little feed in this valley, and that in the event of heavy snows in the month of January the stock is likely to suffer.

Tree Planting.

Read Before the Farmers' Club of Sacramento, January 13th.

The wrong way is too often practiced. The holes are dug—some barely large enough to admit the roots—and these even are often doubled up and crowded in such a manner that a portion of them decay prematurely and the tree is easily blown over. Others are dug and the tree planted as a fence post should be—deep, with the earth well packed around them. In this case certain death to many varieties of trees, such as the stone fruits, locust, etc., follows. Pear, lombardy-poplar, and some other varieties endure this style of planting and frequently do well. Of late years some variation is made in the manner of preparing the holes. For instance they are dug about three feet in diameter, and as many deep. If in hard ground (alkaline it may be) these holes are usually filled with material hauled from a distance, a quantity of manure deposited in the bottom; sediment is used to finish the filling. If in sandy ground it is thought best to have some clay to mix with the sand. The clay is hauled—most likely it is black adobe, or that which is as poorly adapted to the requirements of tree life as the lean washed sediment—the holes are filled, the trees planted—some deep, some shallow—it don't make much difference which, for no very good results are ever seen to follow such unworthy practices.

It is noticeable of late years that a much larger proportion of trees planted along our streets, as well as of fruit trees in our gardens and orchards, die or grow feebly than in former years, which is not chargeable to any change in the manner of planting, but to the fact that the ground has been tramped over, destroying its life-giving qualities, or exhausted of its fertility from long cropping. While our land was new and untrodden, trees planted in the most superficial manner mostly grew and did well, and when spared the murderous trimmings that have utterly ruined so many of the fine trees that formerly graced our streets, are to-day equal in size and beauty to those grown in any city of the land, and at the same time show us what must be done to restore the pristine vigor of our soils before we can hope to attain success.

Another cause has contributed not a little to the failure of tree planting of late years. The trees have mostly been brought from distant nurseries, and for the want of proper care in packing, or the entire absence of any packing, more or less damaged before they are planted. Formerly the demand was almost entirely supplied from our local nurseries. The latter having, to a great extent, been destroyed by floods, leaves most of the nurserymen without the means and the courage necessary to start anew and compete successfully with distant commercial nurseries with whom it is difficult to compete even where no calamities have befallen.

The right way of preparing the ground, if for field or orchard planting, is this: The whole surface should be deeply and thoroughly tilled, either with a plow or by trenching with the spade. For street planting, or where there is but a limited amount of room, the whole of the ground the length of the row, and as wide as possible, should be deeply and thoroughly pulverized, and poor clay or sand replaced with rich friable soil, such as the successful market garden is sure to have, and cultivate carefully. In short, I would have my field or border prepared as one hole holding the entire plantation, being careful to provide proper drainage, so that no stagnant water should come in contact with the roots of the trees. Would avoid putting any gross unrotted manure with the filling around the roots, but instead would use large quantities spread widely on the surface of the ground, only avoiding near contact with the tree to avoid fermentation. Such application should be made as soon as the trees are planted, but never comes amiss at any season of the year. An annual top dressing just before the rains set in first plowing the ground cannot be too highly recommended.

Mulching the trees, as just suggested, is the only substitute for the frequent stirring of the soil. The latter must not be entirely omitted, and particular attention to prevent weeds growing must be given at all times.

With the exception of partially hoed crops for two or three years after planting, the ground should be left vacant in order to allow of frequent cultivation. Wheat, barley, oats, grass, etc., are highly prejudicial to the success of trees at any time, and usually prove fatal to them if grown

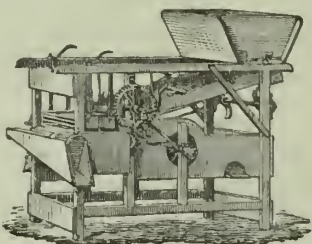
the first or second year after planting. One crop even may so far injure an orchard, though in bearing, that it will never recover from the injurious effects.

J. S. HARRISON.

Freeman's Grain Separator.

The accompanying illustration represents Freeman's improved grain separator, which belongs to a class of machinery in which our local mechanics excel Eastern manufacturers in producing for this Coast. It is intended for farmers and warehouse use, and will be found especially useful to the latter in cleaning seed grain. The grain is fed into the hopper and passes over a wire sieve to which is imparted a peculiar tossing motion and at the same time moves forward and back rapidly. It then drops on to the perforated zinc plates of which screens there are three, and while dropping through, a blast of air from the fan below, blows off the chaff and other impurities. These plates may be lowered by thumb-screws so as to stand at any desired incline. They have a lateral shaking motion so as to facilitate the passage of the grain through the holes.

The cheat and other deleterious substances drop through the sieve into the cheat box below and the cleaned grain into



Freeman's Grain Separator.

its proper receptacle. The different boxes have separate outlets and are so arranged that the contents may easily be sacked without the necessity of anything falling on the floor. The machine is run by hand and can be easily moved from place to place. It will be found especially useful in cleaning grain of the *Silene Gallica*, or French catch fly, a sort of pod which troubles the farmers in many parts of California.

The screen may be removed and attached to any threshing machine, doing away with the chaffing screen and performing the work at one operation. There are three sets of zinc plates and screens for different kinds of grains and they can be changed in a few moments without the necessity of moving any screws. This improvement is the invention of a practical man and one who has had great experience with threshers. Parties having threshing machines can obtain the right to use the patent pod screen on such machines, and those desiring the separator, right of use, etc., may be had by applying to W. D. Freeman, Tomales, Marin county, Cal., who will also give further information to those desiring it.

Post Office Changes.

Following are the Postal changes in the Pacific States and Territories during the week ending December 30, 1871.

POST OFFICES ESTABLISHED.—Hot Spring, Siskiyou county, California—George Townsend, Postmaster; Mount Fairview, San Diego county, California—B. F. Jones, Postmaster; Schellbourne, White Pine county, Nevada—Melchoir D. Raum, Postmaster; Woodburn, Marion county, Oregon—Adolphus Mathiot, Postmaster.

POSTMASTERS APPOINTED.—Calitoga, Napa county, California—William P. Litten; Ellsworth, Nye county, Nevada—P. O. Tyler; Hiko, Lincoln county, Nevada—Charles G. Heath; Rock Creek, Owyhee county, Idaho—J. S. Delavan; Rocky Bar, Alturas county, Idaho—Warren P. Callahan.

DISCONTINUED.—Port Orchard, Kitsap county, Washington Territory.

NAME CHANGED.—Emmaville, Salt Lake county, Utah, to Granite City, and Joseph J. Snell appointed Postmaster.

A NEW HORSE SHOE.—A new horse shoe has come into general use in Paris. It is imperfectly described as being a "narrow rim of iron, which gives perfect protection to the edge of the hoof, without cramping its sole." It is said to require much less weight of metal, and therefore is cheaper. Though not specified, we suspect that nails are not used. It is said to give great satisfaction—it is called the Chanlier horse shoe.

Table of Altitudes.

The following list of altitudes above the sea-level, which has been furnished us for publication, by Mr. W. A. Goodyear, Assistant Geologist, will doubtless be interesting to many of our readers. The localities named are most of them in the region between the North and Middle Forks of the American river. The determinations were made with the barometer by the State Geological Survey during the summer of 1871. The results are not absolutely exact; but most of them will be found very near the truth, and accurate enough for practical purposes:

	Feet above level of the sea.
Colfax.....	2,421
Toll-house at Rice's Bar, North Fork of American River.....	1,146
Parker House, Iowa Hill.....	2,867
Summit of 1st Sugar Loaf, Iowa Hill.....	3,084
Mr. Teasland's House, Wisconsin Hill.....	2,880
Highest crest of Ridge between Elizabeth Hill and King's Hill.....	3,065
Crest of main ridge between Iowa Hill and Damascus, just southwest of head of Green Valley Gorge.....	4,139
Hotel at Damascus.....	4,016
Crest of main ridge immediately south of Damascus.....	4,691
Mouth of Humboldt Canon, south branch of North Fork, American River.....	2,051
Fork's House, on ridge, south of Damascus.....	4,789
Crest of ridge between Forks House and Hog's Back.....	5,468
Secret House.....	5,486
Summit of Secret Hill.....	6,651
Yank's Cabin, Canada Hill.....	6,229
Northwest summit of Canada Hill, Bald Mountain.....	7,179
Miller's Defeat.....	5,812
Last Chance.....	4,545
Bottom of Canon of North Fork of Middle Fork of American River, on trail between Last Chance and Deadwood.....	2,719
Crest of ridge near the Devil's Basin.....	4,390
Hotel at Deadwood.....	3,943
Bottom of El Dorado Canon, on trail from Deadwood to Michigan Bluff.....	1,821
Express office, Michigan Bluff.....	3,488
Bottom of Volcano Canon, on road from Michigan Bluff to Bath.....	2,871
Forest House, Forest Hill.....	3,230
Martin B. Tubb's Saloon, Yankee Jim's.....	2,574
Todd's Valley.....	2,730
Ford's Bar, at mouth of Otter Creek, on Middle Fork of American River.....	795

The State Geological Survey.—No. 2.

In our issue two weeks ago we made some general remarks upon the character of the Geological Survey, the purposes for which it was instituted, and what may legitimately be expected from it. These remarks might easily have been extended to far greater length, showing how broad and complex is the field which falls within the proper scope of such a work, and how difficult are many of the problems with which it has to deal.

But our space would not permit it. For the same reason also, in reviewing what has already been done we cannot attempt any detailed history of the work from its inception down to the present time; but after a brief notice of the most important publications of the survey prior to its stoppage by the Legislature of 1867-8, we shall pass rapidly on to the work of the last two years, of which our account will be somewhat more detailed. Those who desire fuller information must be referred to the published volumes of the report, and to the printed biennial letters of the State Geologist to the Governor, giving detailed reports of the progress of the work year after year.

Earlier Publications.

The first published volume of the report was issued in 1864, and formed a portion of the Paleontology, being devoted to a description of the invertebrate fossils belonging to the formations lower than the tertiary. It was finely illustrated with plates engraved on steel and stone. This is an important portion of the work, since the fossils found in the rocks form the only sure and certain guide by which to solve the intricate question of the relative ages of the rocks. But it possesses little interest to the general reader.

The next publication was issued in 1865, and entitled a "Report of Progress and Synopsis of the field-work from 1860 to 1864." This volume consists of about 500 royal-octavo pages of handsomely printed text, profusely illustrated with geological sections, and sketches of our grander mountain scenery, and crowded with valuable geological facts and data from almost every portion of the State.

The next publication was a second volume of the Paleontology in 1867.

In 1867 also, was published the topographical "Map of the Region adjacent to the Bay of San Francisco" on a scale of two miles to the inch, and covering an area about 88 miles long by 66 miles wide, which is nearly equivalent to the combined areas of the two States of Connecticut and Rhode Island. This was the first really accurate map ever published of any considerable portion of California, and is to-day the finest topographical map yet published of any equal area of mountainous country in the United States. We now pass to

The Work of the Last Two Years.

On the resumption of the work by the last Legislature, the "Map of Central California" was one of the first and most important matters which engrossed attention. This magnificent topographical map, if the means are furnished to complete it, will not only be an honor to the State, but its practical value for all time to come, will only grow more apparent year by year. Its scale is six miles to one inch. It embraces the central portion of the State from Owen's Lake and Visalia on the south to Lassen's Peak on the north, and from Bodega Bay on the west to Cerro Gordo on the east. It is in four sheets, each twenty-four inches square, and covers an area of about eighty thousand square miles, and covers about one-third of the whole area, and probably ninety-five per cent. of the population of the State of California.

The southwestern quarter of this map was already in the hands of the engraver. For the purpose of completing the southwestern quarter, a party was fitted out to explore and map the Inyo and White Mountain ranges and the region south of Mono Lake.

They took the field on the 20th of April 1870. Later in the season Messrs. Craven and Goodyear, with two assistants spent three months in mapping, and working up the complex but extremely interesting geology of the region in the Coast Range extending from the head of Napa Valley northwesterly some distance into the higher mountains beyond Clear Lake.

The fine engraving of this map, which is of necessity a slow and costly work, is already almost half done, and if the means are furnished the whole thing can be completed, the engraving finished, and the map published within the next two years. The geological field-work for this map is being done simultaneously with the topographical work, so as soon as the map is finished it will only remain to color the geology upon it, and publish the descriptive volumes, which can then be quickly done.

Few people have any adequate conception of the amount of labor involved in the production of such a map; but every one who travels in the mountains can appreciate its practical value when once it is completed. It would be a great loss to California not to have this map completed and published.

Ornithology.

We must not omit to mention one other publication of the survey. The first volume of the "Ornithology of California," devoted to the land birds of the State, made its appearance in the spring of 1871. This beautiful volume is finely printed, and illustrated with 662 engravings on wood and copper. The plan of these illustrations is as follows. Each species, over three hundred in all—has a life-size figure of its head colored from the life, by hand, while full length portraits illustrate the general appearance of some one representative of each genus. This is by far the handsomest volume yet published by the Survey. The coloring of the engravings is finely and delicately executed. It forms a most elegant standard work, and should be found in every gentleman's library.

In our next we shall have something to say of another, and extremely interesting department of the Survey-work.

KANSAS CITY VS. CHICAGO.—Kansas City, this season, packed fifty thousand head of cattle. Chicago packed only fifteen thousand head, although the business used to be one of the largest items in the trade of the Lake City. The explanation is given in the fact that packed beef is shipped from Kansas City through Chicago to New York for seventy cents per hundred. Of this amount the road east of Chicago receive forty-two cents. The rate from Chicago is sixty-five cents. At this discrimination the Chicago packers are indignant, and acknowledge that its cause is a mystery they are unable to solve. Chicago is chagrined at the loss of the trade, and Kansas City is correspondingly exultant.

POPULAR LECTURES.

Industrial and Agricultural Needs of the State.

[By Prof. EZRA S. CARR, of the Cal. State University, before the MECHANIC ARTS COLLEGE, Mechanics' Institute Hall, S. F. Reported expressly for the Press.]

LECTURE NO. IV, JAN. 13, 1872.—The course of lectures before the Mechanics' Arts College was resumed on Saturday evening before a full class. Mr. Hallidie announced that the next lecture of the course would be delivered by Professor Kellogg of the Chair of English Literature in the University. Prof. Carr announced as his subject the "Industrial and Agricultural needs of the State." He began by contrasting the present condition of the English laborers with those in America; and thought that the greatest proof of the power of free institutions lay in the amount of information possessed by American laborers in the face of the carelessness shown in their education, and if Europe was daily more and more preparing for a republican form of government, how careful should our Government be to secure the perpetuation of its freedom by a thorough education of its working classes.

The first great requirement in this land is the fullest and most liberal education of the masses. It is not sufficient, in order to train a boy to vote intelligently upon the question of free trade, that he should simply understand arithmetic and grammar but that he should be liberally educated. The time is approaching when scientific study of human nature will be a necessity. Until the laws of life and the manner in which they affect social problems are learned and understood, legislation will remain a series of legalized experiments. A vital question is how shall we educate our young men so as to make more farmers, mechanics and producers. The lecturer gave a very graphic account of the causes which have led to the decline to the country and farm life in its social aspect, and said that one man, by leaving a rural home for the pleasures of city life on the acquirement of riches, would unsettle the minds of many of his neighbors and render them dissatisfied with their lot. People must rely upon co-operation and community and begin to care more for neighbors than for acres. The people of the little settlement of Anaheim have profited by understanding this principle.

While drawing a vivid picture of rural life and labor, he said that it was useless to eulogize callings from which farmers' and mechanics' sons were turning in disgust. When they grew up they began to see that the trades of their fathers kept them in a lower position in the social scale than they wished to be, and they desired to become clerks and abandon the business of their fathers as beneath them. He alluded to the fact that already in California we are to-day looking to the lower class of foreign immigration for manufacturers, mechanics and laborers in the field. We must learn, and at last are beginning to learn, that the farm and factory are to be the foundations of success in this State as in other ones. The lecturer gave a graphic account of the causes which led to the decline of country life, attributed it to defective education, and advocated æsthetic culture as its cure.

The prejudice against "book learning" on agricultural matters, and the old notion about "mother wit and plenty of manure," has passed away and had its day. Inventors, mechanics and newspapers are rapidly bringing about a proper acknowledgment of the benefits of science as applied to the affairs of every-day life, and in enlightening and improving the world. The increasing popularity of agricultural and mechanical colleges is one of the best assurances of a rapid change for the better. The lecturer followed with a highly

interesting account of the agricultural and mechanical colleges of Europe, especially those of Prussia, where the government at the expense of hundreds of thousands of dollars annually maintains and supports schools and colleges devoted to the practical teaching of agriculture, mechanic and productive arts. Here thousands of scholars, from the sons of nobles to those of the poorest peasant, receive a liberal education at the expense of the government; and some of them do manual labor in the fields and workshops, and attend the schools during their leisure time.

Prof. Carr here reviewed the condition of the same institutions in this country, which are yet in their infancy, and gave a description of what our own State University intends to do, paid a glowing tribute to the Regents for their liberal spirit in throwing open the doors to all, without distinction of sex, and closed the lecture with an eloquent tribute to agriculture as the first foundation of all arts.

USEFUL INFORMATION.

CONCORD AXLES.—For fifty years the name of Concord, N. H., has been familiar on every stage road as a great center for the manufacture of coaches, and, in many sections of the country, famous not only for its coaches, but also for its wagons and carriages of almost every description. Many shops throughout the country may claim to produce as finely finished work, but for durability and perfect action none have more justly deserved the enviable reputation they have acquired than the Concord manufacturers. One very important reason of the superiority of their manufacture has been the quality of the axles used. It is claimed by Messrs. D. Arthur Brown & Co., proprietors of the Concord Axle works, located at Fisherville, a village in the town of Concord, N. H., that the material used by them in the manufacture of axles is of a quality superior to that usually employed for this purpose, and that by a process of manufacture peculiar to them, their axles wear longer, run truer, and carry a heavier load than any in market. The present firm commenced operations in 1864, the business of the establishment having been previously begun in 1858. They are now manufacturing from 200 to 250 tons of finished axles, besides about 300 tons of stove and other castings per annum. Their goods are sold extensively throughout New England, in many of the Western cities, and largely in California and along the Pacific Coast.

AN IMPROVED CRUCIBLE.—A crucible for melting metal has been invented, which consists in providing the ordinary crucible of plumbago or other substance with a flue or passage from the bottom to the top, for allowing the heat to act upon the center of the mass of metal contained in the crucible more directly than it otherwise can. This passage is surrounded by a shell or tube of the same material of which the crucible is made. The inventor also grooves, or indents, or constructs the sides of the crucible, both inside and out, so as to form projections to interlock with the paste or clay or other substance with which the crucible is coated, to cause the coatings to be retained much longer than they now are, thereby preserving the crucible much longer, and reducing the cost of melting steel or other metals.

THE substitution of slate for boxwood in engraving is found to be specially adapted for engravings in relief. It is stated that while blocks of slate are easily cut, they will wear as well as electrotypes, and furnish over one hundred thousand sharp impressions without loss of detail. The plates are not affected by oil or water, do not vary with temperature, and never become warped, which is the grand fault with box wood under certain conditions.

RAISING SILKWORMS.—Carret, of Chambery, by a peculiar system of warming and ventilation, is said to have reduced the period of breeding silkworms to eighteen or twenty days. As an evidence of the advantages which sericulture has derived from scientific research, M. G. Raulin states that an ounce of the eggs furnished by M. Pasteur yield about three times as much silk as an ounce of the ordinary eggs.

A Big eel in a water-pipe stopped a three hundred horse-power engine in Lancaster Mills, Clinton, a few days since.

GOOD HEALTH.

Doctors and their Fees.

Only quacks advertise "No cure, no pay." All honorable physicians charge for their time and trouble in proportion to their talent and reputation, no matter whether the patient remains sick, or gets better, gets worse, or dies.

Many physicians make a discrimination in regard to these charges, according to the wealth of the patient; and this appears no more than fair, as a poor man is unable to pay as much as a rich man. Not that his life is worth less; it may be worth more, for all that, as the poor man may perform useful labor, while the rich man may be a useless consumer of the goods of creation; but that ought not to cause a physician to charge a rich man less, as the best rule for them is, to let the rich pay for the poor, and to help the very poor for nothing, as all respectable doctors actually do.

The *Medical Gazette* reports that previous to the thirteenth century the law regulated the fee for doctors proportionally to the rank of the patient; so for curing a bishop or local chief, he had forty-two cows, and for a member of the lowest rank only six cows. This was for serious complaints; for slight complaints, it was less in proportion, and if no cure was performed, there was no pay.

Dio Lewis declares that our present system of employing doctors is all wrong, and advises people to make contracts with them at \$200 for each family, and a deduction of two dollars for each case of sickness. This is the Chinese system. There every family of note has its physician, who has a salary of a certain sum per head, to keep them all in good health. The amount of this salary is according to the social condition of the family and the reputation of the doctor. As soon as a member of the family is sick, his share in the salary is stopped, and not commenced again before his health is restored. It is seen that the doctors in China are not encouraged to protract the sickness of rich persons, as is the case with us.

The Use of Camphor.

When the mucous membrane of the nose, frontal sinuses, etc., is affected by catarrh, a strong solution of camphor frequently and for some hours snuffed up the nose, and five or six drops taken internally on a lump of sugar, at first for every ten minutes, then every hour, will usually put a stop to the affection. Ordinary cold and even influenza, if treated in this manner at the very beginning of the attack, are generally controlled by the same treatment.

Attacks of incessant sneezing and profuse running at the eyes and nose will generally yield to a strong solution of camphor diligently sniffed up the nose. In summer diarrhoea no remedy is so efficacious as camphor, if employed at the very commencement of the disease; later it is without effect. Its influence over cholera is equally remarkable. Dose: six drops of a strong alcoholic solution of camphor, given at first every ten minutes; afterward, as the symptoms abate, less frequently.

To Avoid the Ague.

EDITORS PRESS:—There are a few malarious districts in California where ague or chills and fever are more or less prevalent. A residence of 20 years in one of the most malarious districts of Michigan, and a close observation of cause and effect, convinced me that one of the best preventives to ward off the attack of this troublesome malady, is found in fortifying the stomach with a full, hearty breakfast, as soon after getting up in the morning as possible, and before taking hold of any of the severe labors of the day. W.

TREATMENT OF FOOT-SORENESS.—The *Lancet* states that the Inspector-General has directed that every man suffering from feet blistered by marching is to be taken at evening parade to the medical officer, who should cause him to wash his feet, and then to pass a needle with a worsted thread through each blister, cutting off the thread a little distance outside the blister at each side, and leaving a portion in it. The part is then to be rubbed with common soap, the sock put on and wetted over all prominent points, and the soap again rubbed over them freely. When properly attended to, no man should be unable to march the following day on account of blistered feet, unless the cuticle has actually been removed, leaving a raw surface exposed.

Biliousness.

Persons inclined to biliousness should carefully avoid all mental disturbance or excitement at meal time, or just before or after it. It is wonderful with what promptness in some individuals the least mental excitement or disturbance will stop digestion in the stomach; eating too hurriedly; a little vexation because the dinner is not ready or because it is not cooked to suit; being engrossed in some perplexing thought or revolving some wild scheme while eating, are all so many injunctions on the stomach-work of sensitive bodies. Time to eat should be taken, and no more than on the sanctity of the family devotions, should anything else be allowed to encroach. We ought at that time to consign to a momentary banishment all petulance and bad tempers, and be, for the time, smiles and benignity all over.

The digestion of animal foods is not interfered with to nearly as great a degree by mental and nervous causes as that of vegetable origin; hence it is proper to eat quite largely of meats and milk, but they—the meats—should be carefully prepared with regard to digestion.

We cannot but believe that the lining of the stomach which induces many of these attacks, is brought about by too frequent meals. Many do not allow time for digestion and rest for the organism between the meals, a second eating of hearty food is brought for digestion, before the first is fairly disposed of. People ought to arise early enough to take an early breakfast, or else they should take a very light one, and the supper ought to be postponed until at least six hours after dinner.

For bilious attacks of spring we must regulate our diet to the changing of the season. Decrease the amount of fat producing, carbonaceous food consumed; eat less fat meat—better eat none at all; discard the ham—not the eggs, drop off the buckwheat cakes, and put away the syrup pitcher for another year, or use it very sparingly. Bring in instead of these—the eggs, lean meat, milk and vegetables, being always sure to have them cooked with most scrupulous care as to their digestibility. Avoid constipation, and keep the body well clad and protected against the chilling winds of the season.

REPLANTING A TOOTH.—When the tooth is somewhat loose, and painful to bite on, with swelling at the gum, and suppuration, the tooth is taken out; all the diseased parts are scraped from the roots, and it is washed and disinfected in carbolic acid, but those portions of mucous membrane which are commonly attached to the neck of a tooth, and appear healthy, are not scraped away. The socket from which the tooth was drawn is also properly cleaned, and the tooth is put back in its former place, and in a number of cases takes root, and fixes itself firmly in the course of a fortnight, and then becomes as serviceable as the other teeth. This is a remarkable instance of vital force. By the small portion of living tissue left adherent to the tooth, attachment to the jaw is renewed; and though failures occur, there is reason to believe that as in other surgical operations, they will become fewer as the operators acquire experience. The teeth are so important to life and health, that whatever tends to preserve them should be encouraged.

IN FEVERS.—As long as the patient is able he should sit up out of bed, at least one hour of the day—longer, if he should not be raised while he is perspiring. The bed should be constantly made every day, the sheets and linen should be changed every two days, taking, however, the greatest care that they are dry even as tinder. Nothing more induces to protract a fever than keeping the sick constantly in bed, and withholding a constant and regular supply of fresh linen.

HEALTHFUL EFFECT OF ATMOSPHERIC PRESSURE.—M. P. Bert has been experimenting upon the vital effects of varying atmospheric pressure. He finds that a sudden diminution of pressure to the extent of 15 or 18 centimeters speedily produces death, but if the diminution is gradual, the life of mammals may be sustained even under so low a pressure as 12 centimetres. The consumption of oxygen and the temperature of the body diminish with the diminution of pressure.

THE curdango, alleged to be a cure for cancer, is not a tree, as has been supposed, but a vino similar to the grapo, and its fruit is about twelve inches long and four in diameter. The sap of the vine is the color of milk, and this is believed to contain the valuable elements of the vine.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

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SAN FRANCISCO:

Saturday, Jan. 20, 1872.

Our Weekly Crop.

As visitors approach the entrance to our farm this week they will meet with a representative individual of one of the best friends of man, to be found in the animal kingdom, and some interesting information will be given "About Sheep in General," not often met with. They will also please take notice of the sensible advice on the "Culture of Raisins," and the "Policy of Keeping a Few Hens." Notwithstanding the irregularity of the the mails, our correspondence arrives promptly, and to-day we have some interesting information about "Agriculture in Montana," "How to Keep from Freezing," about the "Remarkable Succession of Floods," etc. Our Mechanical department gives some information about another important triumph in that line, in the way of "A Successful Rotary Puddler," while the lover of science will be delighted with an interesting lecture from Prof. Tyndall on "The Force of Life."

Turning from these somewhat heavy subjects, we find a few valuable "Horticultural" and "Farm Hints," and the latest report from "The Santa Clara Farmers' Club." After looking over our usual "Agricultural Notes," our attention is arrested by some interesting facts with regard to "Planting Trees," and an improved "Farmers' Grain Separator," which we have just set up. A "Table of Altitudes" is placed for convenience next to "The State Geological Survey," after perusing which we listen to an interesting lecture by Prof. Carr, on the "Industrial and Agricultural Needs of the State," and gather up some further "Useful Information" about "Doctors and Their Fees," "Biliousness," etc.

Our Editor next furnishes us some valuable and timely hints about "Sunflower Seed—Its Uses and Value," also about the practice of "Wet Plowing," "Grafting Grape Vines," etc. Our head farmer has put up "Knowles' Patent Steam Pump," for irrigation and other farm purposes, and explains fully its uses and purposes. We now pay a brief visit to the "Sacramento Farmers' Club," after which we drop into the "Home Circle," where the poet of the family reads us a story about "The Wife of Brown," after which paterfamilias tells us all about the "Market Value of Rose Leaves," about "Laughing Children," and about "The Switches Worn by Our Belles." The cook also reads us a very sensible lesson on the relation of "Cooking and Architecture," and gives us sundry other useful and interesting hints.

UTILIZING THE APPLES—CIDER VINEGAR.—Mr. N. P. Woodworth of Stone Point, says the Russian River *Flag*, has a cider mill of his own construction, with which, by the aid of a man and horse, he can make 300 gallons of cider per day. Mr. W. converts his cider into the cider vinegar and ships it to this city. The house to which it is shipped should advertise through the *Press* where this genuine cider vinegar can be found.

COMMUNICATIONS RECEIVED.—"Farm House Chat," "Proceedings of Santa Cruz Farmers' Club," "The Fluke Rot in Sheep."

Sunflower Seed—Its Use and Value.

No more ungraceful plant exists than the sunflower; still to those who have made its class a study there are few other plants, so easily made valuable. The sunflower is one of the most generous of the flower race in its yield of seed. The native and cultivated plant of the East carries a blossom about four inches in diameter which ripens over a tea-cup full of seed. The wild sunflower found in some portions of California, is of course much smaller, being only about one inch and a quarter in diameter; seed small, but extremely nutritious, being the favorite delicacy of swarms of wild birds and wild ducks.

It is generally known that sunflower seed is fed to hens—they are fond of it, and fatten on it. From a gentleman in Wisconsin who has made the poultry business a specialty for nearly fifteen years, we have gathered a few facts by way of correspondence, upon the variety of food given to fowls. He has been in the habit of planting sunflower seed along the ditches and fences around his fields. The seed is gathered in the autumn before it becomes hard, and coarsely ground and put away in barrels, to be mixed with the feed for the poultry. It is considered the best fowl fattening feed used, and also beneficial for layers. The stalks of the plant, after being threshed for the seed, are buried in the garden soil before it freezes; in the spring they are decomposed and are plowed into the soil, and considered a choice mould, which greatly benefits garden produce, especially lettuce, radishes, and rhubarb. This knowledge has been obtained by careful study and patient experiment.

Turkeys and Ducks.

The sunflower seed is also used almost exclusively in the best Western heneries, for fattening turkeys and ducks. It has been observed that fowls carefully fed on this seed and fattened for the holiday markets in the Western States are tenderer, sweeter, and command a higher price than those which are fed with other food.

No soil or climate in the world is better adapted to the cultivation of the sunflower than that of California, especially the southern counties. Fine hedges can be made of the plant as well, and the seed may be used profitably for feed. People who complain of the lack or high price of feed for their fowls, would do well to try this experiment. Cut down the plant as the seed commences to harden; thresh it out, coarsely crush it, and mix it with other food. Your poultry will thrive and yield profitable returns for the care and attention so easily given. Sunflower seed finely crushed is greatly relished by canary birds and quails also. It has no doubt a greater value as food than the generality of people are aware of. The leaves also make excellent fodder, and when fuel is scarce the stalks can be used to good advantage for cooking purposes.

Other Uses.

The cultivation of the sunflower is attracting special attention in India, and from a correspondence from that country we gather the following valuable items.

The oil extracted from the seed is said to be superior to both almond and olive oil for table use, and to be employed in manufacturing woolen goods, soap, and candles, as well as for lighting purposes. The leaves have been manufactured into cigars, having pectoral qualities, and might, perhaps, be found more efficacious than stramonium. The blossoms furnish a bright yellow dye, which stands well. Each acre will contain from 15,000 to 20,000 plants, and the average quantity of seed will be 50 bushels, each of which will give a gallon of oil. The quantity of seed will be much increased by dwarfing the plants, the best manure for which is said to be old mortar broken up. The plants should be kept clean and free from weeds, and the quantity of seed required is about six pounds per acre. They should have sufficient interval between them for exposure to the sun as under such circumstances they become larger and more fully stored with seed.

The sunflower is also extensively cultivated in Russia, where the annual product is said to be over thirty-three million pounds—16,500 tons.

JAPANESE SILKWORM EGGS.—Hon. Frederick Watts, Commissioner of the Agricultural Department at Washington, has been pleased, on the recommendation of Senator Cole, to forward to Secretary Johnston, of the California Cotton Growers and Manufacturers' Association, a lot of Japanese eggs. They are the *Bombyx Mori* variety. Amateurs and professional silk breeders can have some of these eggs, if timely application shall be made either to James Dale Johnston, 107 Sansome street, or to President Ellsworth, at the salesrooms of the California Silk Manufacturing Company, Market street, near Sansome.

Grafting Grape Vines.

Many who have experimented are finding it to their advantage to give greater attention to the production of raisins, and one or more of these desire information on the feasibility of converting portions of their vineyards of the Mission, or as it is sometimes called, the native grape, into raisin vineyards, by engrafting the better varieties for that purpose upon their old stocks. Grafting the vine is nothing new in horticulture, and yet there are many successful operators in ordinary tree grafting, who are not experts in vine grafting. In ordinary tree grafting it is simply necessary that, in the case of cleft grafting, the cleft should be made as clean as possible, at the point of union between the bark and wood, the scion to be made wedge shaped and smooth and tapered to fit the cleft, and then inserted so that the inner bark of the same shall come in conjunction with the inner bark of the stock, then cover with suitable bandage and all is right.

In the case of the grape the same rule is to be observed where the stem will cleave freely, but with this difference: grapes succeed much better when the grafting is performed just under the surface of the ground, that when done the earth may be drawn quite up and over the stock and scion, except a single bud at top.

But there are many cases in which the stock is not sufficiently straight in the grain to admit of a smooth split or cleft; when this occurs the grafting can be performed with almost certain success, by first sawing off the stock below the surface of the ground, then with a smooth cutting bit, bore one or more holes as near to the outer edge of the wood as possible, and one and a half inches deep; let the holes be a trifle smaller than the scion to be inserted, then with a scion of two buds, remove the bark on an inch and a half of the end and round off with a sharp knife till it will just fit the hole by a gentle downward pressure. The scion should strike the bottom of the hole which prevents the undue accumulation of juice at that point.

It is not as necessary that the bark of the stock and scion should come in contact as with hard wood trees, but having done as directed, draw up the earth as before, around and over the scion and success is equally sure. The operation by an expert graftsman is quickly performed and a large number of vines can be made to change their fruit from undesirable sorts to those in better demand; and the growth is extraordinarily rapid, producing in many instances fine crops of fruit the same year.

Wet Plowing.

A correspondent of the *Bulletin* takes exception to an article in the *Press*, in which it was maintained that adobe lands should not be plowed when too wet, and the soil thrown up into lumps to remain till the slacking process—the work of months—reduced them. The *Bulletin* man says:

"I have plowed adobe for fifteen years, wet and dry, and the time is to come yet for me to see it lumpy in the summer time. In 1862 and '63 I plowed 200 acres of adobe the water filling the furrow every bout. I harrowed my grain in about the middle of February, it was in splendid order and you could not find a lump in the summer as big as a walnut. I got twenty sacks to the acre. In the fall of '70 I cultivated 100 acres of adobe dry, for hay, tearing out lumps from the bigness of a hen's egg to a water-bucket. I cut three tons to the acre and you could not find a lump. I should like to know what brick yard makes bricks out of adobe and not anything else."

In support of our position we have the authority of every agricultural paper in the country; we have also the experience of a practical farmer in Sonoma county, written over the signature of "M.," in a former number of the *Sonoma county Journal*; on the subject of plowing adobe land, he says: "Never plow or tramp your ground when wet." Again he says: "By plowing in the fall and spring only, when the ground is in order, or not too wet, it will become more and more crumbly, and you will have an inexhaustible soil." Now who shall decide when "Practical Farmers" disagree? We did not say that bricks were made of adobe.

THE GOPHER NOTICE has received a decided check by the late and continued heavy wet. Millions of the little "varmints" have found watery graves in the low-lying lands along our river courses, and now, if the farmers will make common cause, in extirpating them from the uplands, where they have already suffered much, the State will be well high rid of a nuisance, the magnitude of which during the last three years of drouth has caused a much greater pecuniary loss to the State than all the damage done by the late storms.

IRRIGATION UNDER DIFFICULTIES.—"J. A. W.," writes from Holtville, N. Y., that he thinks there is no part of the agricultural world, where the farmer need suffer severely from drouth, if he only makes the best use he can of the means within his reach for irrigation. He himself lives in a region where, when he first located, he had to draw most of the water for his stock from wells four miles distant; and the wells within a mile of his house were 80ft. deep. Under these circumstances he immediately set about constructing cisterns and reservoirs, not only to catch the rain fall from his house, but the drainage from his lands also—using the latter for irrigation purposes. His reservoirs were made tight by cement, so that they should not leak, while evaporation was checked by covering them from exposure to the sun. They were so constructed that the last bucket of water could be readily drawn from them.

BUTTER.—A Lakeport correspondent asks if any of the readers of the *Press* can tell why it is that cream will not always make butter, and says "I have churned cream for two days without the least appearance of butter; the rich, thick cream will by churning become as thin as water."

A dairyman of large experience, just now at our elbow, says: Give the cows at all times all the salt they will eat, and never commence the churning if in winter, when the cream is very cold; but warm it a little by setting it near the fire or by the addition of warm water before the churning commences.

GOT 'EM ALL.—A subscriber writing from Marin County is anxious that our traveling correspondent should visit his neighborhood and write it up—but one of our agents visited that region lately and got every man to subscribe, so that it would be of no use to send one there again on that business. Our agent should have written up the place when he was there; but as we cannot make out the precise locality from which our correspondent writes, we are unable to say whether he has done so.

CAN'T GET ALONG WITHOUT IT.—A subscriber from Colusa has failed to get his paper regularly since the late storms set in. He writes that he can't get along without it—had rather miss all his other papers than the *Rural*. Missing numbers sent.

THE SAN FRANCISCO CO-OPERATIVE BUILDING ASSOCIATION.—The primary object of this association is to enable its members to acquire homes of their own on the easiest possible terms, and incidentally offer an opportunity for the profitable investment of small or larger sums by the shareholders, on good real estate security. This institution is calculated to do an immense amount of good to the working classes, and we would advise all such who are paying rent, to visit the office of the association, at 306 Montgomery street, get one of its circulars, inform themselves thoroughly with regard to its plans and advantages, and take immediate steps to secure, what everyone should have—a home of his own. The plan of co-operation has been thoroughly tried in Great Britain, where there are about 3,000 associations, with an aggregate income of some fifty millions of dollars. It is also fast being introduced into our Eastern cities—in Philadelphia alone there are said to be about 300 such associations with an annual income of five and a half millions.

FARMERS' CLUB ESSAYS.—In another column we publish to-day an essay, read before the Farmers' Club of Sacramento, on the subject of planting trees, generally, by J. S. Harbison—a gentleman of great experience in the business of which he writes. Another essay was read at the same meeting, by E. F. Aiken, on the Cultivation of Evergreens in this State, which we shall publish next week. As these subjects are now of immediate interest, both with those who may want to plant trees, and others, we feel confident our readers will all be pleased to find these essays in the columns of the *Rural Press*. We shall also have something to say, editorially, upon the general subject of Forest Tree Culture, in our next issue.

A LIQUID RENNET.—We call attention of the farmers, and particularly mothers, to an advertisement in our columns, of Dickey's Liquid Rennet. This is said to be a most valuable preparation, and one that is so highly recommended, we would advise our readers in need of the article to give it a trial.

TEA CULTURE.—Col. Hollister, of Los Angeles county is making extensive preparations for the culture of tea.

Effect of Climate on Cotton.

The Industrial Society of Mulhouse, a town in southeastern France, having offered a prize to encourage the study of the cultivation of the long-staple cotton of our Sea Islands, with a view to its possible production in Algiers, where all attempts to produce it have hitherto failed, M. de Sibourg has written a long paper from which we take a few extracts, using the report published in *La Propagation Industrielle*.

In reply to the question as to the causes of the tenacity of the fibre of Sea Island Cotton, or the peculiarities of culture to which it may be more particularly due, M. de Sibourg answers in substance:—

1. Carefully selecting the seed of the finest plants for sowing, and continuing this selection during a long number of years. The plants which produce the longest fibres produce also the most tenacious. That this process of selection has had much influence, is proved by the fact that during the war of secession, when the planters were obliged to quit their plantations or leave them in inexperienced hands, the cotton degenerated in quality, and has not even yet been brought back to its former quality.

2. Carefully adding to the soil (in the shape of manures, etc.,) those ingredients which are shown by chemical analysis to be necessary.

3. Peculiar atmospheric conditions. The cotton is sown in places where it can receive the two requisites of plenty of heat and plenty of moisture. The lowest temperature of the Sea Island district is 0° C. (32° Fah.) the highest 37° C. (98° Fah.); the winter mean about 12° C. (54° Fah.), the summer mean about 30° C. (86° Fah.) Rains in the spring occur and abundant dew in the summer and fall. The average amount of water absorbed by the earth in this region during nine years was:

Spring.....	25.0 Centimetres*
Summer.....	44.5 "
Autumn.....	26.5 "
Winter.....	19.0 "

Yearly Total.....115.0 Centimetres.

Besides the dews of summer and of the beginning of autumn, the fogs which arise from the ocean every night and are drawn over the land have undoubtedly an important influence; but the exact effect of these saline vapors is as yet unascertained.

The nearer the sea the better the quality. If several seeds of the same plant are sowed at different distances from the ocean, the quality of the cotton produced degenerates with the distance, until that grown sufficiently far inland, away from the influence of the sea breeze gives a short staple cotton with seed like that of Upland cotton. The converse is also true. Inland cotton planted by the sea improves in quality. Hence it is held that the long-staple and the short-staple cotton are merely hypertrophic varieties of the same plant.

The author, in conclusion, thinks the long-staple cotton probably can in time be produced elsewhere of good quality, but it would demand the greatest care and study. The atmospheric conditions are very important, but most important are: The careful selection of the best seeds each year, care in cultivation, and proper preparation of the soil by means of manures.

In further evidence of the important effect produced by climate upon cotton, we were recently told by a gentleman who has been engaged for several years in raising cotton at the Fiji Islands, that he obtained his seed originally from the Southern States, but that with no especial care, either in cultivation or selection of seed, his cotton has been steadily improving, until it is now worth \$1 per pound in New York, or three times as much as cotton from the same original seed grown in Georgia.

*A centimetre is thirty-nine one-hundredths of an inch.

Facts From Sherman Island.

EDITORS PRESS: We saw an item in your paper Jan. 13th, 1872, copied from the *Alta*, which is not correct, so far as it relates to the cause of the levees giving away on Sherman Island. The breaks which occurred were caused by the bank of the river having been cut between the river and the levee. The most difficult one that we have had to manage, is where there is no ditch inside of the levee, and where all the material in the levee has been taken from the outside, between the levee and the river.

The levees where all the material has been taken from the inside have showed no signs of giving away, and have not been damaged in the least. Mr. Walker or any one else interested, if they will visit Sherman Island, will find these statements to be stubborn facts. During the past few days all these breaks have been repaired. The reclamation of Sherman Island has been carried on by the owners of said island under the superintendence of the Trustees of Swamp Land District Nos. 50 and 54, and not by any Reclamation Company. You will please call the attention of the *Alta* to this correction.

S. H. BROWN, } Trustees.
P. H. BOGGS, }
A. J. BIGLOW, }
D. G. PERRY, Sec. of the District.

Knowles' Patent Steam Pump.

We give, herewith, a representation of an old and well-trying portable steam pump—compact, effective and durable, and at the same time a very simple machine for forcing water from springs or wells to hotels, private residences, railway stations, etc. It is also specially adapted to irrigation purposes, raising water for stock, or for any other purpose for which water is required to be raised to a great height. Several of these machines have already been sold in this State for irrigation purposes.

The machine is portable, calculated to be placed at or near the point from which water is to be taken, and force it to any distance that may be required.

Its simplicity is such that very little skill is required to operate it; it has no cranks, fly-

mittee of Five of the most thoroughly practical machinists on this coast, it was awarded the first premium over all competitors—the committee reporting that it lost but 11½ per cent.; while some pumps which were tested lost as high as 40 per cent.

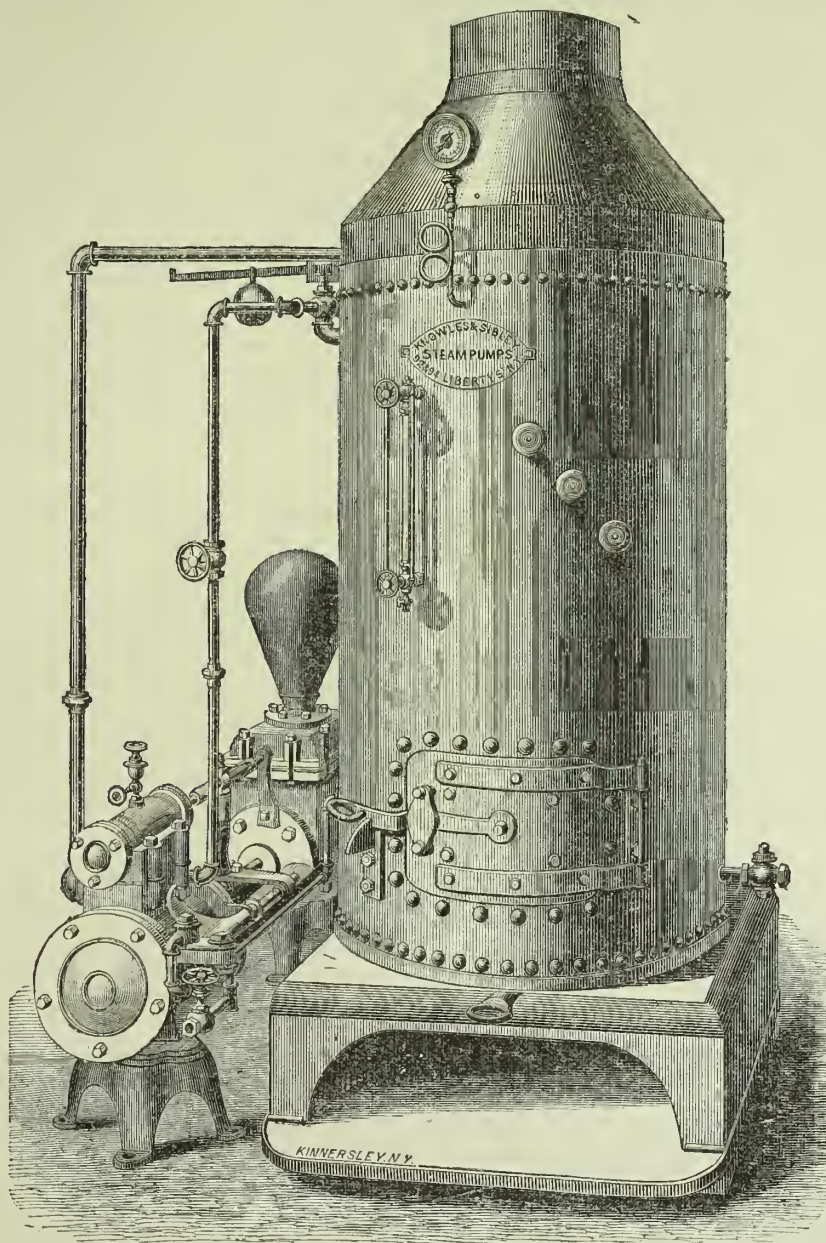
It also received a diploma and medal at the last State Fair at Sacramento, which evidences of merit may be seen at the company's offices in this city.

The Central Pacific Railroad has 19 of these pumps in use along the line of the road for fire engines and for pumping water for shop and station use.

A. L. Fish, at No. 9 First street, is the agent for their sale in this city.

California Brandies.

The *Wine Dealers' Gazette* for January, commenting on the values and qualities of California Brandies, undoubtedly comparing them with those of other countries, ar-



KNOWLES' PATENT STEAM PUMP.

wheel or dead-points, and is always ready to start as soon as steam is turned on.

It is made in regular sizes, so that all parts of any one machine of a given size will fit in its place in any other machine of the same size; thus in case of wear or accidental breakage, an order to the agent in this city by mail or telegraph can be promptly filled without the necessity of visit in person or the assistance of a machinist to adjust the broken part.

The headquarters of the Company are at 92 and 94 Liberty street, New York. One of the proprietors of this paper recently visited the warehouse in that city, and had the pleasure of a personal inspection of the extensive business done by the firm in this line, and of the admirable order and system with which everything is accomplished. The company is said to have one of the largest stocks of pumps in the country—embracing all sizes, and calculated for every conceivable character of work.

The pump herewith shown took the highest premium at the two great Mechanics' Fairs in the country in 1869—the Massachusetts Fair at Boston and the American Fair at New York.

The pump was also exhibited at the late Fair of the Mechanics' Institute in this city, where, after a trial of steam pumps, by a Com-

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Sacramento Farmers' Club.

The Club met at Sacramento on Saturday afternoon, and was well attended. W. R. Strong, C. W. Reed, A. Menke, J. Rutter and W. B. Ready joined the club. The discussion of the subject of tree planting was continued. Harbison read an essay on planting trees, and Aiken read one on the cultivation of evergreen trees—the former of which will be found in another column.

Dunning of Michigan, Miller, Secretary of the Bay District Horticultural Society, and Reimer, an extensive nurseryman of San Francisco, were introduced to the club and invited to take part in the discussion.

C. W. Reed had noticed in his experience that fruit trees planted with the tap root on had a tendency to grow too high. The tap root being cut off, the tree spread better and formed better top.

Aiken suggested that Nature teaches a good rule as to tap roots. In dry, hard soil the roots shoot down for moisture, while in loose or damp soil the roots spread more on the surface.

Williamson thought Aiken had made a mistake in recommending the importation of trees. We have better evergreens in our mountains than can be imported for cultivation here. Some of our nurserymen were engaged in propagating these valuable evergreens, and ought to be encouraged by patronage. The redwood was a most valuable timber, as also the sugar pine for cultivation—more valuable than any Eastern timber—and if the Legislature or any one would offer any inducement, our nurserymen would engage in their cultivation extensively. He would contract with any responsible parties to grow 1,000,000 redwood trees this year for \$2 per thousand, to be delivered one year old.

Manlove thought it would be very difficult to import evergreen trees from the East, as the roots contained a resinous sap which if once dry they would not grow. Aiken had imported the small tree by mail and succeeded well. A great deal of care and skill was required.

Miller was of the opinion that the Eastern evergreen tree was not well adapted to our climate. The redwood was adapted to the damp, foggy climate of the coast and would not as a timber-making tree grow well on our dry plains. The sugar pine would do well in the mountains where it was found, but not in the valleys. But the cultivation of artificial forests was not likely to be engaged in without some inducement by the Legislature, or from some other source, held out to our people, and he was in favor of these societies, such as the Farmers' Clubs and Agricultural and Horticultural Societies, taking steps to secure an act of the Legislature for this purpose. He hoped this club would move in the matter.

Aiken believed the difficulty of growing trees in any climate was found to be more in the germination of the seed and growing the tree when only young and tender, than in climatic or soil adaptation after they had some age. Until within a few years, it was supposed to be impossible to cultivate evergreens on the plains of the Western States, but experience had corrected this idea, and they are now being successfully cultivated by millions. So it would be found that the redwood and sugar pine would grow when once started on the plains, as well as in native mountains.

Williamson thought with Aiken. At Smith's gardens, before the flood washed them away, were growing as fine specimens of redwood as any could be found in the Coast Range. At twelve years old they were twelve inches in diameter, straight and well grown. Johnston thought it would do very well to talk about cultivating forests here for firewood, but the climate was not cold enough to make good timber for manufacturing machinery; that required tough, hard timber. Timber to be grown strong wanted to grow slow with fine grain.

W. B. Ready is a wagon-maker, and from his experience the locust and elm grown here were better than any imported. He had also noticed that the second growth of California oak was, if cut when the sap was down, very tough and good timber. He was convinced, from experiments with good varieties of timber grown here, that this was as good a climate for hard timber to grow in as any in the world.

On motion a committee of five members of the Club was elected by ballot to draw up a bill for the encouragement of forest culture and present the same to the Legislature and urge its passage. Hoag, Haynie, Manlove, Harbison and Aiken were elected as such committee.

Haynie read a bill for a trespass law, which was also referred to the same committee.

The subject of "Fruit Culture in California" was selected for consideration at the next meeting. C. W. Reed and Robert Williamson were appointed to read essays on the subject.

The meeting adjourned to meet at the same place on Saturday (to-day), at 1 o'clock p. m.

A NEW TRADE.—Several months since an experimental shipment of doors and sugar pine lumber was made from this port to Melbourne. The last steamer from that port brought news of the result of the venture, which is sufficiently favorable to warrant further and larger shipments of the same kind. Heretofore, Boston has almost monopolized the Australian market for doors, sash, blinds, and pine lumber, and it is a matter of considerable importance to find that San Francisco will henceforth be able to control a portion of this trade.



The Wife of Brown.

With a haughty head, a stately tread,
And a dainty silken sweep
Where spectral flowers and twilight hours
Of phantom summers sleep;
With a flaunt of plume that beckons "room!"
She sails the pavement down,
While every eye turns to desery
The splendid wife of Brown.

The weary grace of a faded face,
The smear of a horrid wrong,
The labored gnile of a wanton smile
Crawls next amid the throng;
But a wicked brawd's mad masks and gands
Invoke the passer's frown,
And backward strays a blander gaze
To the splendid wife of Brown.

To one he spake and left the ache
Of a heart's dishonored trust;
He pledged her all;—but gave but gall
And a refine in the dust.
And that public ban of the courtesan
That clenches woman down;
Laughed o'er his crime and said, "'tis time
To find a wife for Brown!"

With a meek advance, a flush and glance,
The other lured him on, [gold
Till his love was told, through his wretched
Foretold his plea and won;
Out she lipped the lie of love's fealty
And at the finest church in town
And Fashion's tongue wagged loud and long
Of the splendid wife of Brown.

Still, I should say, in my stupid way,
That no nuptial compact cures
What a God of Love records above
As unwomanly, wicked lures;
For I know the slime of the greater crime
Despite the admiring town,
Thro' her laces oozes and in fine, suffuses
That silken wife of Brown!

Yet her fingers hid in the balmy kid,
Were first to rear the blame
And fiercely pelt, not the wretch who dealt,
But the girl who moans the shame.
Fools! See her, banned by so stern a hand,
In the gutter writhe and drown, [spouses
And from out God's houses lead forth such
As that prudent wife of Brown!

Come, sleek, wealthy Turk by the altar lark,
Where may woman's stealthy palm
On your ledges fall as its ritual,
To barter every charm;
And its waxen splendor, so coy and tender,
Will her honor dare discern,
For the marble brow chills off the vow
Flushed on your Madams Brown!

For the want of a ring—that pagan thing—
Two paupers once were wed
By the rusty round of a key they found
As a symbol in its stead;
And to-day I see a mystic key,
Clutched by that wife, you clown,
To thieve as sweetly and as discreetly
As do other Madams Brown!

Somehow I fret with odd regret
That the world should damn as worse
That maiden frail than a leman's sale
Of her life for a jingled purse;
And 'twere, should I raise in kind dispraise
This hat from off my crown,
To the wasted pearl of an honest girl,
And not that wife of Brown!

—National Rep.

A MAIDEN'S TRUST.—Very beautiful says Leigh Hunt:—There is nothing more lovely in this life, more full of divine courage, than where a maiden goes from her past life, from her happy childhood, when she rambled over every field and moor around her home—when her mother anticipated her wants and soothed her little cares; when her brothers and sisters grew from merry playmates, to loving trustful friends; from Christmas gatherings and romps, the summer festivals in bower or garden; from the room sanctified by the death of relatives; from the secure backgrounds of her childhood, girlhood and maidenhood—looks out in the dark and unilluminated future, away from that, and yet, unterrified, undaunted, leans her fair cheek upon her lover's breast, and whispers:—"Dear heart, I can not see, but I believe. The past was beautiful, but the future I can trust with thee."

SOME of the most trusted of light-house keepers on the Atlantic coast are women.

Boston sends \$2,000,000 worth of flowers to New York every year.

Unfinished.

Two little tired hands fall listlessly from their work. The little enly head is too sleepy to puzzle longer over the ruffles and puffs of dolly's new dress, so it is put away till to-morrow.

To-morrow! Many to-morrows have come and gone, and a fond mother lingers over the little unfinished garment, forcing back the tide of anguish which swells to break her aching heart, as she thinks of a little life unfinished—a young life but just venturing forth on this world's great stage out off, uncompleted, unfinished!

All over the land are those who to-night are sighing "unfinished!" It is the history of a whole life-time in one brief word. We may wander back to our day's first dawning, the bright morning of our existence, before the darkly hovering shadows of adversity had eloded our young hopes—and even there in those bright gilded visions of childhood is the word indelibly impressed on every joy and happiness.

The youth, with high ambitions, looks to the future with sunny anticipations, and his wildest dreams may all be realized. He may be crowned with honor, and live what the world calls a successful life; but when his voyage is almost ended, and "he rides at anchor" for a time "between the hurry and the end of life," he looks back on the busy tempestuous past and finds his life-long task not yet accomplished—his hunger not yet appeased.

Will there not be a great finishing day sometime? Will there not, in the grand hereafter, be a time when the aching hearts which for long years have been estranged, shall be united? When ernshed and vain regrets shall fade away into perfect life and the longings of the immortal satisfied, made perfect, finished?

"Labor with what zeal we will,
Something still remains undone;
Something uncompleted still,
Waits the rising of the sun."

Alice Thorn.

Laughing Children.

Give me the boy or girl who smiles as soon as the first rays of the morning glance in through the window, gay, happy and kind. Such a boy will be fit to "make up" into a man—at least, when contrasted with a sullen, morose, erabbed fellow, who snaps and snarls like a surly enur, or growls and grunts like an untamable hyena, from the moment he opens his red and angry eyes, till he is "comforted" by his breakfast. Such a girl, other things being favorable, will be good material to gladden some comfortable home, or to refine, civilize, tame, and humanize a rude brother, making him more gentle, affectionate and lovable.

It is a feast to even look at such a joy-inspiring girl, such a woman-bnd, and see the smiles flowing, so to speak, from her parted lips, displaying a set of clean, well-brushed teeth, looking almost personification of the beauty and goodness, singing, and as merry as the birds, the wide-awake birds that commenced their morning concert long before the lazy boys dreamed that the glorious sun was approaching and about to pour a whole flood of joy-inspiring light and warmth upon the earth. Such a girl is like a gentle shower to the parched earth, bestowing kind words, sweet smiles, and acts of mercy to all around her—the joy and light of the household.

It has been well said, that "there are two muscels to raise the upper lip, as in laughing, and only one to draw it down; therefore, we should laugh twice to crying once." There may be time for weeping, and even for mourning and melancholy; yet cheerfulness, good nature and joy, are far more favorable to the health of the body and mind. Excessive grief often arrests the action of the stomach prodnces disease. The cheerful and hopeful are far more healthy than the morose, the sour, the fretful and the scolding mortals, who never see the sunlight of cheerfulness or sociability, but who seowl and frown, "look daggers," and feel two edged swords towards all who dare to come within reach of them.—*Oliver Optic's Mag.*

THE GYPSIES have a "Parliament which meets once in every seven years, with delegates from all the countries in Europe. There are no real gypsies in this country; but in Spain there are 40,000, in England 18,000, Austria 97,000, and in Moldavia and Wallachia 200,000. Their next Parliament convenes soon at Cronstadt, Germany and the inhabitants are already taking precaution for the protection of their hen-roosts, spoons, and other light valuables.

Names of Nom-de-Plume Writers of Note.

We find the following list of *nom-de-plume* writers passing current in the Eastern and Western Press:

Artemus Ward	Charles F. Browne.
Barry Cornwall	William Procter.
B. Dadd	J. H. Williams.
Cousin May Carleton	Miss M. E. Earle.
Country Parson	A. R. H. Boyd.
Carrie Carleton	Mrs. Washington Wright.
Currier Bell	Charlotte Bronte.
Daisy Howard	Miss Myra Daisy McCrum.
Disbanded Volunteer	Joseph Barber.
Edmund Kirke	J. R. Gilmore.
Fanny Fern	Mrs. James S. Parton.
Elm Orlon	Mrs. M. M. Pomeroy.
Florence Percy	Mrs. Elizabeth Akers.
Gail Hamilton	Miss Abigail E. Dodge.
George Eliot	Miss Evans.
Grace Greenwood	Mrs. Lippincott.
Howard Glyndon	Miss Laura C. Redden.
Ike Marvel	Donald G. Mitchell.
Josh Billings	Henry W. Shaw.
Jennie June	Mrs. Jennie Croly.
James Pipes	Stephen Massett.
K. N. Pepper	James M. Morris.
Lisle Lester	Mrs. L. P. Higbee.
L. E. L.	Mrs. Landon.
Lounger	Geo. W. Curtis.
Mary Clavers	Mrs. C. N. Kirkland.
Max Sloper, Esq.	C. G. Leland.
Mark Twain	Samuel Clemens.
Miles O'Reilly	Chas. W. Halpine.
Mrs. Partington	P. B. Shillaber.
Marion Harland	Mrs. Virginia Terhune.
Ned Buntline	E. Z. C. Judson.
Owen Meredith	Bulwer, Jr.
Orpheus C. Kerr	Robert H. Newell.
P. B. Doesticks	Mortimer Thompson.
Petroleum V. Nasby	D. R. Locke.
Paul Croyton	I. T. Trowbridge.
Peter Parley	I. C. Goodrich.
George Sand	Madam Dudevant.
Timothy Titcomb	Dr. J. G. Holland.
Village Schoolmaster	Chas. M. Dickinson.
W. Savage North	William S. Newell.
Widow Bedott	Miriam Berry.
Waif Woodland	Mrs. C. P. Blair.

* Deceased.

The Switches that are Worn by Our Belles.

The first switches were made in Central Falls, Rhode Island, by a workman in one of the flax mills. For a long time all that were used—the number of which at first were quite small—were made there. Afterward a firm in Providence commenced the manufacture, under the style of the Japan Switch Company, manufacturing largely. The price then was from \$7 to \$9, realizing a large profit to the manufacturer. Switches then retailed at \$1.50 to \$2 are now sold at 25 to 37 cents. Several parties soon started in Boston employing from ten to forty men each. Some idea of the amount manufactured can be found from the experience of the largest of the Boston manufacturers, employing forty men hae-ling and finishing the jute, and fifty or sixty girls in the manufacture of chignons, using ten bales of three hundred pounds each and three thousand pounds of hair per day.

The above firm used over six hundred bales (170,000 pounds) in less than three months, oftentimes producing three hundred and fifty dozens per day of switches alone. There are also many switches made of fine glazed cotton thread, also of silk dyed without washing out the gum, which gives it the nearest resemblance to hair of any article used. Much of this hair silk is woven the same as ribbons, and afterwards braided like wood in chignons. Jute in a great measure superseded this article, owing to its extreme cheapness.

Market Value of Rose Leaves.

A lady having asked the Farmers' Club of New York city if rose leaves, used so much in the manufacture of perfumes, might not be gathered and dried with profit, and whether there is not a market for them, Andrew S. Fuller responded:—"Rose leaves are imported by our druggists, and cost about \$1.50 a pound. It is not, however, our common garden varieties that furnish the rose leaves of commerce, but the red damask rose, so largely cultivated in some portions of Europe, from which the oil of roses is made. If the writer of the above communication wishes to go into the rose-leaf business, she would first have to establish a reputation for producing a good article before it would be in any great demand. I think the price of labor in this country would greatly interfere with the profits." If the dried leaves bring but \$1.50 per pound, what wages could a woman make per day gathering them?

And what a revenue would accumulate to the State of California alone when we have such a profusion of roses and such an extensive blossoming season—nearly the year through. Sacramento city is frequently called the "City of Roses."

Young Folks' Column.

Catching Santa Claus.

One damp, rainy morning, when Christmas was near,
A shout from my nursery fell on my ear;
There, romping and playing in merriest glee,
Was the happiest group you ever did see.
There was Harry and Julia, Lney and May,
To say nothing of Pnss, and her kittens, or Tray.
When I opened the door, such a sight met my view!
I wish I could paint it and show it to you.

The little ones there, all armed with long sticks,
Were poking and prying, high up in the bricks
Of the chimney,—because they said that they knew
Santa Claus was up there; they declared it was true;
For while they were playing and dancing about
The soot and the ashes came tumbling out:
T'was Santa Claus peeping, to see them at play,
And knocking it down as he scrambled away!

"And, O mother!" cried Lney (the baby was she,)
"I saw him, I know it! I saw his big foot,
And t'was covered all over with ashes and soot;
We'd have pulled him right down here, our dear Old St. Nick!"

We never would hurt him, but treat him so good,
And wash his face clean, and give him some food;

And we would'nt put any bad soap in his eyes,
And he should have half of my cakes and my pies;

And he'd give me a doll with bright yellow hair,
And a rabbit and cat and a big candy pear.
O mamma! do just call him, I know he's up there!"

I bade them be patient—in time he'd be here,
With his bag and his sleigh and his tiny reindeer;
And the stockings of good little children he'd stuff
With candies and toys, till they cried out,
"Enough!"

But to bad ones, who cried, quarrelled or fought,
A bundle of switches was all that he brought.
And I especially begged for the sake of my floor,
That they'd throw away sticks and molest him no more,
By let him stay quietly, just where he pleased,
That the more he would give them the less he was teased!

—Our Young Folks.

Our Franky.

A lovely lady was near death, and as her little friend, Franky, came into the room, she called him to the bed, told him of the bright home up in heaven, where she was soon going, and told him he must remember her and what she said to him.

Although he was but three years old he remembered the conversation distinctly several months. The lady died, and the husband married again, and brought his bride to visit at the house of Franky's father.

The young wife took the child on her lap and began to talk to him. Franky did not answer, but fixing his eyes earnestly on the lady's face, and with childish simplicity, innocently asked:—"When did you come down?"

Oddities.

Time on the jump—Leap year.
Election fruit—the candy-date.
The world in arms—the babies.
Wise men learn by others' harm.
A still tongue makes a wise head.
Smooth words make smooth ways.
High-tied—the old-fashioned top-knot.
Arms have they, yet toil not—chairs.
Hands have they, yet steal not—clocks.
Legs have they, yet walk not—tables.
Teeth have they, yet chew not—combs.
Lips have they, yet kiss not—pitchers.
Eyes have they, yet see not—needles.
Hearts have they, yet pity not—cabbages.
Ears have they, yet hear not—old book leaves.
Tongues have they, yet taste not—buckles.

Spicy Sayings.

A little Waterbury shaver was sitting near his mother, who was picking over raisins, when she was called out of the room. As she left, she said:—"Now, Charley, don't touch any of these raisins when I am gone." Presently the mother returned and inquired:—"Well, Charley, did you take my raisins?" "No, mamma." "You know if you did, God saw you." "Yes, I know he did, but he won't tell."

"Give me a pound of oysters," said a man to an oyster vender who was going by. "I sell by measure, not by weight," said the oysterman. "Then give me a yard of them," said the man. The oysterman shook his head dubiously and passed on.

DOMESTIC ECONOMY.

Cooking and Architecture.

Perhaps one of the greatest treats that a cook could enjoy is to be served with a dinner cooked by some one else. The reason of this is that the constant smell of cooking nauseates the stomach, making it, by the sympathetic action of the several nerves of the system, disinclined to receive what it has so long anticipated through the action of the senses. In some instances the smell of dinner will be perceivable in other parts of the house to a greater extent than in the kitchen. To a delicate person this is sufficient entirely to destroy the appetite, and it is due solely to defective construction.

The cook is too often blamed when the architect is in error; and, while few know where to assign the fault, fewer still know how to remedy it; but it may be taken for granted that the evil will not disappear from amongst us until the art of house construction is based upon a more scientific principle than it has hitherto attained. Art and decoration and the convenient arrangement of accommodation occupy in the present day far too much of the consideration of the architect; whilst sanitary arrangements are neglected, and the healthfulness of buildings suffers in consequence.

In order to arrive at a true appreciation of the causes that lead to the kitchen being a nuisance in the house, instead of, as it should be, the means of imparting pleasure and comfort, we must consider first what is a smell and how it is conveyed. A smell, then—and here we are referring, it will be understood, to a smell that ought not to exist—is matter in a wrong place, and consequently it is dirt; and not only is the smell of cooking when it pervades a house, dirt, in a scientific sense, but it is so, absolutely.

The smells arising from cooking, consist of minute particles given out from food of all kinds, owing to the partial decomposition which takes place during the application of heat and which are carried off and mixed with the surrounding air by steam or other vapors arising therefrom. With a properly constructed kitchen range and flue, these will all be conveyed up the chimney, and carried away from the house. In such a case they are harmless and become immediately, so to say, deodorized by admixture with a preponderating amount of atmospheric air.

When, however, they are permitted to escape into the house, they do not meet with a sufficient quantity of air to render them innocuous; and, upon condensation of the vapors by which they are conveyed, they will settle upon the interior walls and gradually cover them with a coating of grease and vegetable matter. These, if not constantly removed, will accumulate, and in time decompose, giving off still more objectionable and unhealthy smells, but which are not so noticeable in consequence of the more powerful odors arising from a continuance of that evil from which they first had their origin.

It will repeatedly be found that the smell of cooking is strong in other parts of the house and especially upon the floor immediately above the kitchen, whilst the kitchen itself is apparently free—or almost so—from the inconvenience; and the reason of this is, upon a little consideration, made perfectly clear and intelligible.—*Food Journal.*

Powders, Perfumes and Flavoring.

A charming recipe for scent powder to be used for wardrobes, boxes, etc., far finer than the mixtures sold at shops, is the following: Coriander, orris root, rose leaves and aromatic calamus, each one ounce; lavender flowers, two ounces; rhodium wood, one fourth of a dram; musk, five grains. These are reduced to a coarse powder. The scent on the clothes is as if all fragrant flowers had been pressed in their folds.

A perfume for note paper said to be that used by the Queen of England is made of powdered starch, one half ounce; otto roses, ten drops. Put this in bags and keep in the desk with paper.

All delicate flavors may be improvised by keeping the delicate substance in deodorized alcohol. How deodorized? filtering through animal charcoal or bone black in powder, the black may be used many times over; a thick flannel bag with wire on the top will answer for a filter. Fill it with the black dust and pour the alcohol in it, leaving it to settle through. Have wide mouth bottles with glass stoppers ready, and fill with alcohol; then fill with powdered lemon peel, peach leaves,

almonds, slices of pineapple, raspberries or fresh cherries, and she will have a finer assortment of flavors than any manufacturer will furnish her. If she wishes, however, flavors which are out of reach, it is best to use compounds of which she is not ignorant.

Banana may be imitated with oil of jasmine and a very little tartaric acid.

Strawberries with a strong tincture of orris and a very little acetic ether—one ounce of the tincture and one eighth of ether.

Strong tincture of orris root resembles raspberry.

Pineapple is made of butyric ether, the acid itself coming from the transformation of rancid butter by a chemical process.

Very little of these preparations is needed to give the desired flavor.

Four ounces of the tinctures mentioned will supply flavor enough for constant use during an entire summer.—*Harper's Bazaar.*

COOKING HAM.—The late Gen. Winfield Scott, an acknowledged authority in the culinary art, was of opinion that few cooks knew how to cook a ham, because they did not boil it until soft enough to be eaten with a spoon! A great artist once told the writer never to serve a ham under one year old; it was then to be soaked all night in soft water, and, if possible, running water; it was then to be put on the fire in a large pot of cold water, and slowly boiled at least twenty minutes for every pound it might weigh; and as for skinning a ham, he held it to be an outrage, a sacrifice to mere appearance, which no sensible man should be guilty of. If your ham is to be served cold, as is always done in Europe, it should be souzed in snow or ice-water immediately after coming from the pot, because the sudden cold arrests the flow and escape of the juices.

HOW TO MAKE A BARREL OF APPLE BUTTER.—A thirty gallon boiler or kettle of cider right from the press, to avoid fermentation; boil down to one-half, then add eight bushels of apples to the cider by degrees as they boil down; cook the mass for twelve hours, straight ahead, when it will become of a dark brown color; stir with a paddle all the time of the boiling; then add the following spices, to be well stirred in with the paddle: One ounce of cloves, two ounces of cinnamon and let it boil half an hour longer, when the process will have been completed. It is safest to put it in jars immediately after the work of boiling is finished; the jars should be tied up securely so as to exclude the air. For a larger or a smaller quantity take the proper proportions of the above ingredients. The apples must be pared, the cores taken out and then cut up in small pieces or thin slices, the more readily to dissolve in the course of boiling.

KEEPING STOVES, ETC., CLEAN.—Few housekeepers, says some one, have time to blacken their stoves every day, or even every week. Many wash them in either clean water or dish-water. This keeps them clean, but they look brown. After a stove has been blackened it can be kept looking very well for a long time by rubbing it with paper every morning. If you occasionally find a drop of gravy or fruit juice that the paper will not take off, rub it with a wet cloth, but do not put on water enough to take off the blacking. Rubbing with paper is a much nicer way of keeping the outside of a tea-kettle, coffee-pot, tea-pot, bright and clean, than the old way of washing them with suds. The inside of coffee-pots and tea-pots should be rinsed in clean water, and never in dish-water.

COOKING STEAK.—A lady correspondent of the *Ohio Farmer*, who knows, advises—First, get tender steak; no matter what part it is from, so it is tender; let it be three fourths of an inch thick. Cook it at the last moment, when every other dish is ready to be set on the table. Use a wire broiler if you can get one. Have a hot fire and when it is crisped on one side, turn it over and crisp it on the other. If fat drops and blazes, throw a pinch of salt on the coals. Don't do anything else while it is cooking. Have your plate hot and a lump of butter melting in the bottom. Put butter on the upper sides and eat it in five minutes after cooking. More steak is spoiled by slow cooking than by any other fault.

It is said that buckwheat flour of excellent quality is made by crushing instead of grinding the grain.

TO FARMERS.—How many clods make one wisecrack.

Domestic Receipts.

CARROT PUDDING.—Take a half pound of grated carrot, one pint of new milk, a quarter pound of soda biscuits, three ounces of sugar, and half a small teaspoonful of powdered cinnamon. Wash and scrape the carrots very clean, grate them into half of the milk, cold; boil the other half pint of milk, and pour it upon the biscuits, broken in small pieces; cover it with a plate, and when cool, mix well with the carrot and milk, adding the sugar and cinnamon, and bake it in a buttered dish in a moderate oven.

ANOTHER CARROT PUDDING.—Take a half pound of grated carrot, a half pound of bread crumbs, one pint of new milk, half a pint of cream, six eggs, four ounces of sugar, and two ounces of butter. Wash and scrape the carrots very clean, grate them quite fine, mix the pulp with the bread crumbs, sugar, nutmeg, or mace, and a little salt; add the eggs, well beaten, and bake it in a puff paste, in a moderate oven.

PIG'S HEAD BOILED.—This is a very profitable dish, though not so pleasant to the palate. It should first be salted, which is usually done by the butcher. It should be boiled an hour and a quarter. It must be boiled gently, or the meat will be hard; serve with vegetables.

PIG'S HEAD BAKED.—Let it be divided and thoroughly cleaned; take out the brains, trim the snout and ears; bake it in an hour and a half; wash the brains thoroughly, blanch them, beat them up with an egg, pepper and salt, and some finely chopped or pounded sage, and a small piece of butter; fry them or brown them before the fire; serve with the head.

BAKED HAM.—Most persons boil ham. It is much better baked, if baked right. Soak it for an hour in clear water, and wipe dry; next spread it all over with thin batter, and then put it into a deep dish, with sticks under it, to keep it out of the gravy. When it is fully done, take off the skin and batter crushed upon the flesh side, and set it away to cool.

MINCE MEAT FOR PIES.—Six pounds of beef, finely chopped, four pounds sugar, six pounds apples, chopped, two pounds citron, three pounds currants, one pound suet, one quart sherry wine, one pint brandy, half a cup of salt, two tablespoonfuls of ground cloves, two of allspice, two of cinnamon, add sweet cider enough to make it very damp. A few thin slices of butter laid over the mince as the plates are filled, is preferable to the suet.

Mechanical Hints.

A NEW ZINC PAINT.—M. Artus, connected with the Belgian Zinc Company, has prepared a zinc white, made up with silicate of potassa or soda and used to paint zinc and other objects. The cement is something in the nature of a cement or artificial stone, and will withstand the action of the air, sun and water. It can be employed to advantage on metal roofing, also on plaster, brick and wood. Its chief value will be in rendering wood, paper and tissues unflammable, and for this purpose ought to be generally known. The value of the mixture for cements will also attract attention to it, and we shall probably hear of its extensive use as a constituent of artificial stone. The heat of rooms under roofs painted with this mixture was found to be 10 degrees less than under the painted metal.

SALT WATER IN STEAM BOILERS.—Engineers using salt water in their boilers should be provided with a *Salinometer*, having four made points measured on the scale, one for fresh water, one for sea water (water containing 1.32 of salt) one for water containing 2.32 of salt and one for water containing 3.32 of salt. When the specific gravity has increased from the mark 1.32 to 2.32, it is a proof that the proportionate quantities of salt and water is such that the amount of salt is double that of sea water. This is considered the limit; and when this point is passed, it is time to blow off water. As a saturated solution of salt in water contains 37 per cent. of salt, or about one-third, it is clear that engineers blow off long before the point of saturation has been reached.

PAPER BOX MANUFACTURE.—There were in 1840 but five paper-box manufactories in this country, with an aggregate business of \$20,000 per annum. Single establishments now turn out millions of dollars' worth of goods annually, and it is said that an average of seventy-five new shops are started every year.

LIFE THOUGHTS.

THE error of a moment is often the cause of sorrow for a life.

It is better to lose a good coat than a good conscience.

SOME men make an impression only by falling in the mud.

MEN can no more be perfected without adversity than a gem can be polished without friction.

As distrust is sometimes the mother of safety, so security may be the gate of danger.

WOMAN is a divine creature only when distinguished by virtue and mental elevation.

POVERTY would not be so much of a misfortune if the world didn't treat it so much as a crime.

HE who has a good son-in-law has found a child; he who has a bad one has lost a daughter.

A VIRTUOUS effort may fail, but not a virtuous life.

Books are embalmed minds. Fame is a flower upon a dead man's heart.

MANY idle men seek enjoyment as mendicants beg their bread—from door to door.

If a man cannot readily recognize merit, it is very certain that he has none himself.

ROSES of pleasure seldom last long enough to adorn the brow of him who plucks them, and they are the only roses which do not retain their sweetness after losing their beauty.

Where Our Thoughts Come From.

The human mind is like a ponderous engine upon a railway track. A small point of iron at a switch will turn it to the right or left—sending it on its proper course, or perchance causing it to go over an embankment, or into another train, crushing both in shapeless destruction. The sight of some object, a word spoken or read, will give one's train of thoughts a new direction, or some direction quite different from what it would otherwise have taken. Upon very small things depends all one's future course in life. Parents, teachers, guardians, in fact every one, may well ponder this. We are all influencing each other, giving direction to thought, every day, every hour, every moment.

One hint in this connection: A family read a journal (say like this) for a year, and, at the end of that time, do not recall any particular advantage therefrom. But how many new channels of thought have their minds been led into by what they have read! How much of vacancy there would be if they blot entirely from their minds all the information they have gained, and all the new ideas and plans of their own, suggested only, and indirectly at that, by what they have read during the year! The truth is, one cannot read and think to much about his daily labor. If he get not one new positive piece of useful information, the thinking developed by reading other men's views and ideas can but be useful in stimulating him to reasoning, to intelligent labor—that labor in which his head aids his hands. Labor without intelligence is merely brute muscle in exercise.

A HOLY LIFE IN LITTLE THINGS.—A holy life is made up of a number of small things. Little words, not eloquent speeches or sermons, little deeds, not miracles, nor battles, nor one great, heroic act, or mighty martyrdom, make up the true Christian life. The little constant sunbeam, not the lightning, the waters of Siloam, "that go softly" in their meek mission of refreshment, not 'the waters of the river, great and many,' rushing down in torrent noise and force, are the true symbols of a holy life. The avoidance of little evils, little sins, little inconsistencies, little weaknesses, little follies, little indiscretions, and imprudences, little foibles, little indulgences of self and of the flesh; the avoidance of such little things as these, goes far to make up at least the negative beauty of life.

The following gem is from the pen of Rev. Chapin:—The letter of the Scripture may be questioned and argued, but you cannot question the love of the Father nor the gift of the Son. My heart felt this when I laid my beloved child to rest, and your Science, or all its turning axles can not grind from my heart all the comfort God's love gave me then."

Tobacco Culture.

At the recent fair of the Mecklenburg (Va.) Agricultural Society, Mr. Evans Tanner was awarded a prize of \$10 for the following essay, entitled:

A Plan for Preparing Land and Cultivating Tobacco for Shipping.

In the fall I follow my land with a two-horse plow, following the turning plow with a good coultter, as deep as possible. As soon after the 1st of January as the weather will admit, I burn my plant land, having previously prepared my wood in the month of December, or earlier, if convenient, burning the land well. After the burning I cover the land well with stable manure and Peruvian guano, or other fertilizers, and hoe it in, not very deep, without turning up the soil. After sowing, tread or root the land well, and cover well with brush, regulating the covering by the kind of land; if wet, cover thin; if dry cover heavily. After the plants are up, if the flies depredate feed them upon tobacco seed; it is the surest antidote known to me. After the plants get about five inches high I commence the preparation of my land in the following manner: I attach two mold-boards to a common trowel hoe, which I prefer to a turning plow; into this furrow I drill my manure and fertilizers. I then run one furrow on each side with a single-horse plow, covering the manure. On this ridge I plant, after marking and checking the ridge with a stick or small pole, about three feet for ordinary land and three and a half feet for highly improved. The plant may be inserted in the mark made by the stick or pole, or a short distance from it. This makes the row both ways. After six or eight days depending on the weather, I throw out the row, or rather I run two furrows; this will leave but a small place to weed, if done by a careful hand.

About the time I desire to apply a little dirt to the plant, I run close to the tobacco with a bull-tongue plow and apply the manure or fertilizer the second time, then throw out the row with the turning plow. Two furrows generally suffice. The hoe hand has but little to do, merely putting a little dirt to the plant. The last time I work it I use the trowel hoe with two moldboards once in a row, then hill it with a large, high hill, which prevents drowning. I prime low, not above the two first large leaves, and top at ten leaves, not higher, and let it get thoroughly ripe, when I commence cutting. I get hands enough to cut and fill a twenty-foot barn in a day. The next morning I put small fires, increasing them every morning for five days, which is generally sufficient to cure the tobacco. By pursuing this, my yield is generally about four plants to the pound. I may say that if any young farmer will adopt this plan, I venture he will never regret it. I forgot to mention that if the tobacco ripens yellow it will cure up yellow, and vice versa.

HOPS WITHOUT POLES.—A correspondent of the *Country Gentleman* writes as follows: Eight years' experience has proved that; we can pick our hops as cheaply and much neater, by using baskets to pick from the vine, trained horizontally and low, without cutting any part of the vine, thus leaving it to mature and ripen the root for next year's use; when the hop yard is trailed in this way, no hills die, but the plant is more vigorous each year, as long as it is well taken care of, with one-fourth the manure that is required if the vines are cut. Many of our hop growers are not aware of the great outrage they are committing upon the first principles of vegetable physiology by severing such a mass of vines and foliage, as is done in all cases where the hop is trained high and the vines cut to pick. I have seen yards of luxuriant growth and great yield picked early, bleed so as not to produce the next year; the ground around the hill would be kept wet for days by the flow of sap from cutting.

VOLCANIC ERUPTIONS.—In the eruption of Vesuvius, A. D., 79, the scoria and ashes vomited forth, far exceeded the entire bulk of the mountain; while in 1660, Atna disgorged more than 20 times its own mass. Vossuvius has sent its ashes as far as Constantinople, Syria and Egypt. It hurled stones, eight pounds in weight, to Pompeii, a distance of six miles, while similar masses were tossed up 2,000 feet above its summit. Cotopaxi has projected a block, 109 cubic yards in volume, a distance of nine miles; and Shimbawa, 1815, during the most terrible eruption on record, sent its ashes as far as Java, a distance of 300 miles of surface; and out of a population of 12,000 souls, only twenty escaped.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Jan. 18.

FLOUR.—We note an active local demand with a good enquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 10,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.75@6.00; extra, in sacks, of 196 lbs. \$6.75@7.00. Standard Oregon brands, extra, may be quoted at \$6.75@7.00.

WHEAT.—The business has been large during the week under review, several large holders having sold their stock. Sales aggregate 50,000 sacks fair to choice at \$2.20@2.30 per 100 lbs. Quotable at close at \$2.15@2.30 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 9d. per cental.

BARLEY.—Has been firmer during the past week, at unchanged rates. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.50@1.75, which is the range at close.

OATS.—Demand has been moderate during the week under review. Sales 3,000 sacks ordinary coast to choice bay, at \$1.50@1.75 per 100 lbs. which is the range at close.

CORN.—Is quotable at \$1.75@2.00 for yellow and white respectively per 100 lbs.

CORNMEAL.—Is quotable at \$2.75@3.25 per 100 lbs. from the mill.

BUCKWHEAT.—Is jobbing at \$2.50 per 100 lbs.

RYE.—According to quality is quotable at \$2.37½@2.40 per 100 lbs.

STRAW.—Quotable at \$7.00@8.00 per ton by the cargo.

BRAN.—Selling at \$31 per ton from the mill.

MIDDLINGS.—For feed, are selling at \$37.50 per ton from mills.

OIL CAKE MEAL.—In good demand at \$10 from the mill.

HAY.—Receipts have been free, and prices at close are \$19.50@23.00 for fair to choice per ton.

HONEY.—We quote Los Angeles comb at 12½@15c. Potter's in 2-lb cans, \$1 per doz.

BEESWAX.—In good demand at 40c per lb.

POTATOES.—Market has been quite heavy during past week owing to free receipts. Sherman Island, 40@50c; Bodega, Tomales and Petaluma, 65@75c; Humboldt, 80@95c. per ctn.

SWEET POTATOES.—Are selling at \$1.00@1.25 per 100 lbs.

HOPS.—The range is 45@60c.

HIDES.—During past week 1,566 Cal. dry sold at 18@19 and 1,390 salted at 8@9½c.

WOOL.—The market has been quite light during the week under review, and transactions few; sales of 20,000 lbs. are reported at current rates. Prices for good to choice shipping grades are 22@28c per lb. Sales of extra choice at 30c; burry 17@21.

TALLOW.—Market quiet at 8½@9c per lb.

SEEDS.—Flax 3c; Canary, 5@7c; Alfalfa, 15@17c; Mustard—California Brown, 3@6c; Cal. White 3½@4½c. per lb.

PROVISIONS.—California Bacon 13½@14c; Oregon, 14½@15c; Eastern do. 13½@14c; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 11@14½; Oregon, 15½@16c; California Sugar-cured Hams, 16½@17c; Oregon do. 17@18c; Eastern do. 18@20c; California Smoked Beef, 13@14c. per lb.

BEANS.—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; small Butter \$2.50@2.75; large \$3.00@3.25; Pink \$3; Bayo, \$3.40@3.60; Navy \$3.50 per 100 lbs.

ONIONS.—Fair to choice, \$1.00@1.50 per 100 lbs.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Pecans, 5@8c; Pecan, 25c per lb Walnuts, new, 12½; Hickory, 12c; Brazil, 16c; Chili Walnuts, 10c; Cocomnuts, \$6.00@8.00 per 100.

FRESH MEAT.—Market has remained firm since last report. We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 10@11c per lb. do. 2d quality 9@10c per lb.; do. 3d do. 7@8c.

VEAL.—Quotable at 10@12½c.

MUTTON.—10@12½c. per lb.

LAMB.—12½@13c per lb.

PORK.—Undressed grain-fed is quotable at 6@6½c. dressed, grain-fed, 9½@9¾c. per lb.

POULTRY.—Live Turkeys, 18@20c. per lb.; dressed, 22½c. per lb.; Hens and large Roosters, \$9.00 per dozen; Spring Chickens, \$7.00@8.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME.—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.00@3.50; Small Ducks, \$1.50; Wild Geese \$2.00@3.00 per doz.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is in free supply, and prices tending downward; it may be quoted at 35@45c; California firkin butter, 27½@30c. Pickled, 25@30c. Eastern firkin, 20@30c. per lb.

CHEESE.—California, 15@19c, Eastern, 16@18c. per lb.

EGGS.—In free supply. California fresh, 57½@60c. per doz.

LARD.—California 12½@13½; Oregon in bbls. and kegs 12½@13c; Eastern in cases 14½@15 do in tes. 12½@13c. per lb.

FRUIT.

Mex. Oranges, M. \$25 00@35 00 Cal. do 100 2 50@3 00
California do 15 00@25 00 Bananas, bunch 2 50@3 50
Limes, M. 10 00@15 00 Apples, eating, bx 1 25@2 50
Austin Lemons, bx 4 00@5 00 do cooking, bx 1 00@1 50
Sicily do 8 00@10 00 Pears, box 75@9 00

DRIED FRUIT.

Apples, per lb. 8c @ 9c Platted, do 20 @ 22
Pears, per lb. 8 @ 10 Raisins, per lb. 10 @ 15
Peaches, per lb. 8 @ 10 Black Figs, per lb. 8 @ 12½
Apricots, per lb. 8 @ 10 White, do 15 @ 20
Plums, per lb. 6 @ 8

VEGETABLES.

Cabbage, per lb. 1 @ 1½ Marf. Squash, ton \$10 00@15 00
Garlic, per lb. 1 @ 1½

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Dealers report a good demand for seasonable articles under this head.

BAGS AND BAGGING.—There is only a moderate demand for any kind at present, and prices remain largely nominal.

BOOTS AND SHOES.—There has been a fair demand during the week under review for goods in this line at unchanged rates.

BUILDING AND FENCING MATERIALS.—The local trade has been fair, and only moderate demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do dressed \$30; Spruce \$17@18; Redwood \$16@

\$30 for rough and dressed. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, 31 00 to 32 50
Refuse do do 20 00 to 21 50
Merchantable surfaced and rough clear 28 00 to 30 00
Refuse surfaced and rough 18 00 to 20 00
Merchantable beaded flooring 28 00 to 30 00
Refuse do do 18 00 to 20 00
Merchantable rough 15 00 to 16 00
Refuse do do 11 00 to 12 00
Fancy Pickets 22 50 to 25 00
Rough Pickets 15 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@

\$20 for flooring.

COFFEE.—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manilla, 19½; Rio 19½@20.

Ground Coffee in cases 30c; Chicory, 12½.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole

Pepper 19c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod in bundles at 5c, and in cases at 8@8½c; Salmon, in bbls. \$5.50@7.50, hf do. \$3.50@4.50; Case

Salmon, \$2@3 per doz for 1@2-bb cans respectively; Pickled Cod, \$1.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS.—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER.—California Straw Wrapping, sells at \$1.50 per ream.

PAINTS.—We quote White Lead at 10@12½c; Whiting, 2c; Chalk 2½c per lb.

RICE.—Sales of China No. 1 at 8½@8¾c and No. 2 at 7½@7¾c per lb; Siam, quotable at 7@7½c in mats; Carolina, Table, 9½@10; Hawaiian, 8½@9 per lb.

SUGAR.—We quote Cal. Cubic at 14½c; Circle A Crushed, 14½c, and Granulated 14c; Yellow Coffee and Golden C, 12½@13c; Hawaiian 8@12c as extremes per lb.

SYRUP.—Prices may be given as follows: 82½c in bbls, 85 in hf bbls, and 90c in kegs.

SALT.—California Bay sells at \$5@5½; Carmen Island, in bulk, \$13; Liverpool Coarse, \$18@20; do Stoved, \$22.50 per ton.

SOAP.—The prices for local brands are 5@10c, and Castile, 12@15c per lb.

TEA.—We quote Hyson at 60@75c; Gunpowder and Imperial, 95c@1.05; Young Hyson and Moyne, 90c@1.15; Foo Chow Oolong, 50@90c; Pouchong, 37½@45c; Souchong, 50@75c; Japan 40@75c. per lb.

San Francisco Metal Market.

[Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, January 18, 1872

IRON.—Scotch and English Pig Iron, per ton \$52 50 @ 55 00
White Pig Iron, do 45 00 @ 48 00
Refined Bar, bad assortment, per lb. 04 @ 04½
Refined Bar, good assortment, per lb. 05 @ 05½
Boiler, No. 1 to 4 05 @ 05½
Plate, No. 1 to 4 05 @ 05½
Sheet, No. 10 to 13 05 @ 05½
Sheet, No. 14 to 20 06 @ 06½
Sheet, No. 24 to 27 06 @ 06½
Horse Shoes 7 50
Nail Rod 10
Norway Iron 8 50
Rolled Iron 5 50
Other Irons for Blacksmiths, Miners, etc. 5 @ 6

COPPER.—Sheathing, per lb. 24 @ 26
Sheathing, Yellow 24 @ 25
Sheathing, Old Yellow 11 @ 11½
Composition Nails 24
Composition Bolts 24

TIN PLATES.—Plates, Charcoal, 1X per box 12 00
Plates, 1C Charcoal 10 00
Roofing Plates 11 00
Banca Tin Slabs, per lb. 45
Steel—English Cast, per lb. 16
Drill 17
Flat Bar 17 20
Plough Points 3 75
Russia (for mouldboards) 12½
QUICKSILVER—per lb. 65
LEAD—Pig, per lb. 08
Sheet 08
Pipe 09
Bar 08
ZINC—Sheets, per lb. 10
Borax—Refined 25
Borax, crude 5

IN TOWN.—L. P. McCarty, the travelling correspondent and agent for the "Pacific Rural Press," paid us a visit yesterday. Mr. McCarty is canvassing the State thoroughly for his paper, and corresponds regularly for it each week. The "Rural Press" is devoted entirely to the interests of the farmer, and is decidedly a very valuable paper for them. It is published by Messrs. Dewey & Co., San Francisco, every Saturday. Terms four dollars a year.

San Francisco Retail Market Rates.

THURSDAY NOON, January 18th, 1872.

MISCELLANEOUS.

Butter, Cal. fr. lb 55 @ 60
Pickled, Cal. fr. lb 22 @ 24
Do Oregon, lb. 25 @ 30
Honey, per lb. 25 @ 30
Cheese, per lb. 20 @ 25
Eggs, per doz. 60 @ 65
Lard, per lb. 18 @ 20
Sugar, cr. 6½ lb 100 @ 110
Brown, do 10 @ 13
Beet, do 10 @ 13
Sugar, Map. lb. 25 @ 30
Plums, dried, lb. 15 @ 30
Wool, dried, lb. 15 @ 30
Wool, new 67½ @ 70
Second-hand 67½ @ 70

PRODUCE, ETC.

Flour, ex. 55 lb. 70 @ 75
Superfine, do 65 @ 70
Corn Meal, 100 lb. 3 00 @ 3 50
Wheat, per 100 lbs. 2 40 @ 2 60
Oats, per 100 lbs. 1 75 @ 1 90

FRUITS, VEGETABLES, ETC.

Pine Apples, 5 @ 50
Bananas, bunch 30 @ 50
Cal. Walnuts, lb. 75 @ 100
Cranberries, per lb. 75 @ 100
Pears, table, per lb. 75 @ 100
Plums, Cherry, 6 @ 8
Oranges, per 100, 3 00 @ 3 50
Lemons, per 100, 5 00 @ 5 50
Limes, per 100, 1 50 @ 2 00
Figs, dried, per lb. 10 @ 15
Asparagus, wh. 50 @ 75
Artichokes, doz. 50 @ 75
Frustrated sprts. 10 @ 12½
Beets, per doz. 20 @ 25
Potatoes, per lb. 2 @ 3
Potatoes, sweet, 5 @ 5
Broccoli, per doz. 1 50 @ 2 00
Cauliflower, 1 @ 1 50
Cabbage, per doz. 1 00 @ 1 50
Carrots, per doz. 10 @ 25
Celery, per doz. 75 @ 100

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece 27½ @ 30
Turkeys, per lb. 25 @ 30
Ducks, wild, per lb. 50 @ 60
Tame, do 1 75 @ 2 00
Teal, per pair 3 00 @ 4 00
Geese, wild, pair 75 @ 100
Tame, pair 2 50 @ 3 00
Hens, each 75 @ 100
Snipe, per doz. 1 50 @ 2 00
English, do 2 50 @ 3 00
Quails, per doz. 2 25 @ 2 50
Pigeons, dom. doz. 60 @ 75
Wild, do 50 @ 60
Hares, each 40 @ 50
Rabbits, tame 15 @ 20
Wild, do 15 @ 20
Squirrel, per pair 25 @ 30
Beef, tend. per lb. 20 @ 25
Corned, per lb. 10 @ 12
Smoked, per lb. 15 @ 18
Pork, rib, etc. 12½ @ 15
Chops, do 15 @ 20
Veal, per lb. 15 @ 20
Culter, do 20 @ 25
Mutton chops 15 @ 18
Leg, per lb. 15 @ 18
Lamb, per lb. 15 @ 18
Tongues, beef, ea 75 @ 80
Tongues, pig, ea 15 @ 20
Bacon, Cal. per lb. 18 @ 20
Oregon, do 18 @ 20
Hams, Cal. per lb. 18 @ 20

* Per lb. † Per dozen. ‡ Per gallon.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, January 18.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, per lb. 26 @ 29
Santa Cruz Leather, per lb. 26 @ 29
Country Leather, per lb. 25 @ 28

The market is well supplied with French stocks, and prices have a downward tendency. Heavy California skins are firm, with an upward tendency.

Jodot, 8 Kil. per doz. 50 00 @ 55 00
Jodot, 11 to 13 Kil. per doz. 55 00 @ 60 00
Jodot, second choice, 11 to 13 Kil. per doz. 50 00 @ 55 00
Lemoine, 16 to 19 Kil. per doz. 55 00 @ 60 00
Levin, 12 and 13 Kil. per doz. 60 00 @ 70 00
Cornellian, 16 Kil. per doz. 70 00 @ 80 00
Cornellian, 12 to 14 Kil. per doz. 60 00 @ 70 00
Ogerau Cal. 8 Kil. per doz. 65 00 @ 70 00
Simon, 18 Kil. per doz. 65 00 @ 70 00
Simon, 20 Kil. per doz. 65 00 @ 70 00
Simon, 24 Kil. per doz. 65 00 @ 70 00
Robert Calif. 7 and 8 Kil. 35 00 @ 40 00
French Kips, per doz. 1 00 @ 1 30
California Kips, per doz. 65 00 @ 80 00
French Sheep, all colors, per doz. 15 00
Eastern Cal. for Racks, per lb. 1 15 @ 1 25
Sheep Roans for Topping, all colors, per doz. 8 00 @ 10 00
Sheep Roans for Linings, per doz. 5 50 @ 6 50
California Russell Sheep Linings, 1 75 @ 5 50
Best Jodot Cal. f Root Legs, per pair 5 25
Good French Cal. f Root Legs, per pair 4 50 @ 5 00
French Cal. f Root Legs, per pair 4 50 @ 5 00
Harnes Leather, per lb. 30 @ 37½
Fair Bridle Leather, per doz. 45 00 @ 72 00
Skirting Leather, per lb. 34 @ 37½
Welt Leather, per doz. 30 00 @ 50 00
Buff Leather, per foot 17 @ 21
Raff Leather, per foot 18 @ 21

Wool Prices in New York.

BROWN'S CIRCULAR, January, 1871.

DOMESTIC FLEECES.

NEW YORK, MICHIGAN, INDIANA AND WISCONSIN.

Choice Set of Saxony Fl. 60 @ 65
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Saxony Fl. 60 @ 65
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Saxony Fl.

Near Third Street.....San Francisco

HILL'S PATENT
EUREKA GANG PLOW,



The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc.

16v23-1f

MATTESON & WILLIAMSON'S

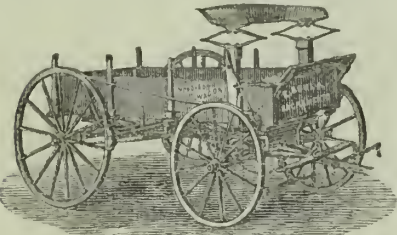


Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

14v2-3m



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best Improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,
SACRAMENTO, CAL.

ap22-3m

JACKSON MICHIGAN WAGONS.



The large sale of the above WAGONS has induced a number of persons to try and sell other Eastern-made Wagons, none of which have any proof that they will stand in this dry climate. JACKSON WAGONS have the highest certificates from use for ten to fourteen years, consequently the buyer runs no risk in purchasing the Jackson Wagons. All sizes for sale low by

J. D. ARTHUR & SON, San Francisco.

N. B.—Warranted for three years. 21v2-3m

DEALERS AND CONSUMERS

Are hereby notified that

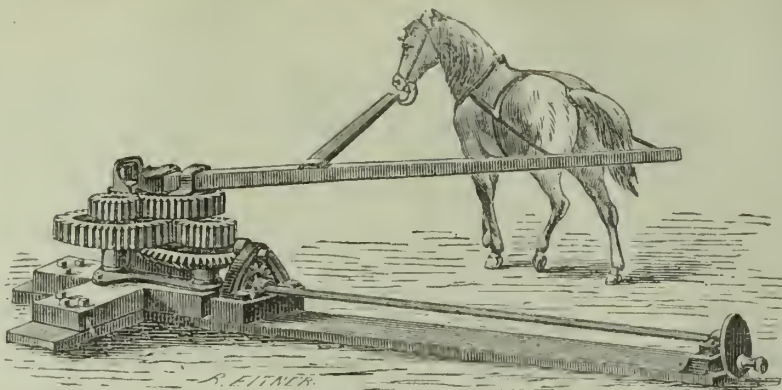
THE STANDARD SOAP COMPANY

Continue to manufacture the following Standard Preparations:

Detergent, Prize Medal and Laundry Soaps; Kane's Condensed Soaps; Thomas' Cool Water Bleaching Soaps; Standard and Eureka Washing Powders; Madame Balcar's Washing Fluid and Liquid Bluing.

Adamantine Candles, and a general assortment of Family, Laundry, Fancy and Toilet Soaps.

Manufactory, 201 and 206 Sacramento street, San Francisco. 21v2-3m



ATWOOD & BODWELL,

MANUFACTURERS OF

EXCELSIOR AND GOLDEN STATE WIND MILLS,

Little Giant and Excelsior Horse Powers,
PUMPS AND WATER TANKS,

Nos. 211 and 213 Mission Street, SAN FRANCISCO.

We are the Largest Manufacturers of Pumping Machinery on the Pacific Coast.



N. B.—We have made the manufacture of Windmills a specialty the past ten years. During the last five years we have manufactured and put in operation a greater number of Mills than any other firm in the State; and we believe that in the last two or three years, more than any other two firms; which fact is the best proof in the world of the superiority of our machines. We GUARANTEE all our work, and we have NEVER FAILED TO FULFILL OUR GUARANTEES. 4v2-1am3m

EUREKA

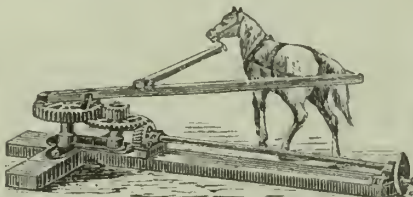


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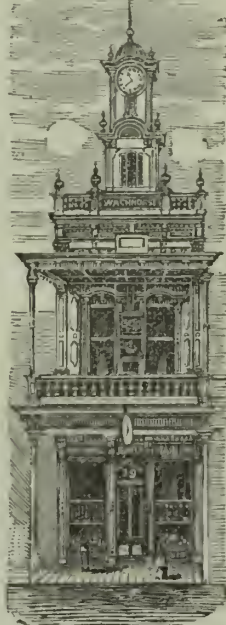
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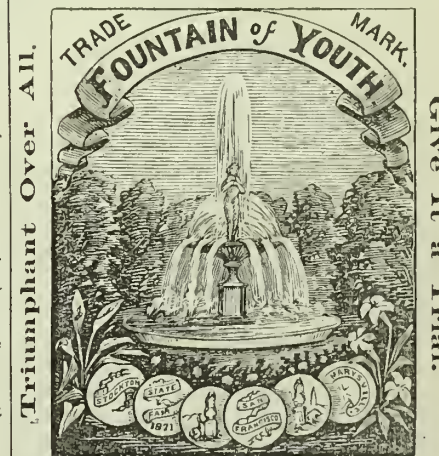
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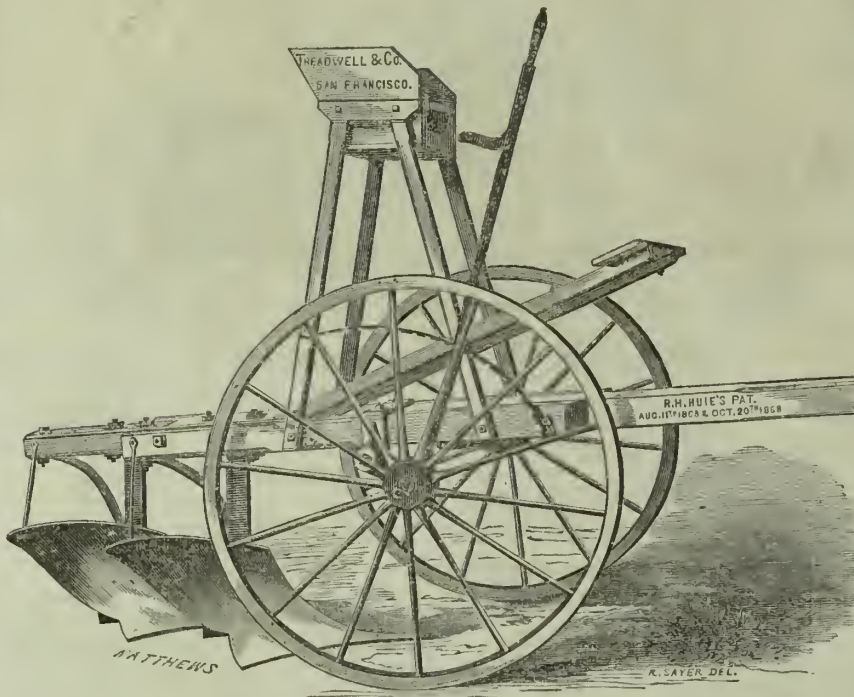
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Volume III.]

SAN FRANCISCO, SATURDAY, JANUARY 27, 1872.

[Number 4

Design for a Small House and Barn.

We present herewith a design for a neat, home-like farm residence, with barn, stable, etc., connected, and conveniently arranged, so as to form a pleasing and tasteful exterior. It may be covered with rustic, clapboards, or with vertical siding, and neatly battened, as shown in the illustration. The front entrance is through a neatly constructed piazza, which, together with the windows, may be ornamented according to the taste and means of the owner. The approaches to both house and barn may be made by gravelled drive ways and ornamented with shrubbery and flowers, as the taste of the proprietor may see fit. If there are native forest trees upon the site selected, the house should be so set as to take the best advantage of them for shade and ornament.

Referring to the ground plan, No. 1 is the front entry 6 feet square, opening into the parlor, No. 2, which is 14 feet by 15, and into a bed room, No. 4, 12 feet by 15. No. 3 is the kitchen, 14 feet by 15, opening into a bed room, back entry and through a passage into the parlor. No. 5 is the back entry, 6 feet by 16, containing stairs to cellar and chambers. No. 6 is a pantry, 5 feet 6 in. by 8 feet, opening into the yard. No. 7 is a store room; No. 9 a scullery or back kitchen, 12 feet square. No. 8 is a porch over the rear entrance, and No. 10 is a wood shed, connecting directly with the barn, which is 40 feet square and contains two horse and three cow stalls.

No. 11 is a passage in the rear of the stalls, with an opening to throw manure into the pig-styes—Nos. 12 and 13. No. 14 is a carriage room, with double doors opening into the yard. No. 15 is a barn room for storage, 24 feet by 39. The space for hay is in the second story, which is well ventilated at the top, as shown. The stairs to the hay loft are at the side of the carriage room, and under them is a harness closet. The second story of the house contains three bed rooms, with a large closet in each, besides a large clothes press in the entry.

STATE AGRICULTURAL SOCIETY'S REPORT.—We are indebted to I. N. Hoag, Corresponding Secretary of State Agricultural Society, for a copy of the Biennial Report of the State Board of Agriculture for the years 1870-1. It is replete with information on various subjects connected with the Agricultural interests of California. Its annual fairs, land monopolies, immigration, the fence question, forest culture, irrigation and reclamation, live stock, fruits, and general farm products; these subjects are all discussed in a manner that cannot fail to interest the reader, and the Report, of only 28 pages, should be in the hands of every farmer in California whose money has helped pay the State Printer for getting it out.

SEEDLING APPLE.—From Mr. O. B. Shaw, of Sonoma, we have received liberal samples of an apple cultivated by him under the name of Cook's Seedling, it being a seedling raised by his friend Mr. Cook, from the seed of the Genueing. It is an apple above medium size, and where exposed to the sun on the tree, a pale yellow beautifully striped with red; of rather a sharp, acid flavor; that while suiting the tastes of many, would not rank as a decidedly rich apple; though possessing to a more than usual degree that fullness of taste and flavor found in many of the Atlantic apples. It seems to possess excellent keeping qualities, being in prime eating condition at the present time, and gives promise of becoming a valuable acquisition to the list of California seedlings.

SACRAMENTO FARMERS' CLUB.—We commend to the attention of our readers the rather voluminous report of the proceedings of this club at their last meeting. It is full of good, practical hints and observations on the culture of forest and shade trees along our highways; the cultivation of special fruits and the mode of putting them upon the market. The kinds of fruits best adapted to particular purposes; and particularly the best way of drying and preserving them, will be found of peculiar interest to many engaged in the production and drying of figs and raisins. Such discussions as

THE ARTESIAN WELLS OF SANTA CLARA.—We call the attention of our readers to an interesting article on another page of this number, on the Artesian Wells of San Jose. There are a few, possibly many, who believe that the numerous wells of that valley have a tendency to make drier than it otherwise would be, the surface soil in that vicinity. It is evidently the object of the writer of the article to show—and we think he does it quite clearly—that an impervious strata of clay or "hard pan," as effectually cuts off all descending moisture from the surface downward, as it does the water in the

Japanese Waterproof Paper.

We have just received from the editor of the *Anglo-American Times*, 127 Strand, London, an immense pamphlet, containing reports on the manufacture of paper in Japan. Presented to both Houses of Parliament by command of Her Majesty, etc., etc., 1871. Consul Lowder gives an account of the manufacture of paper in Japan from the Paper Mulberry with numerous colored illustrations, representing the whole process of manufacture. Also speaks of the Tororo, another plant, from the roots of which a fine quality of paper is made, warranted to wash; and an oil paper for rain-coats, etc., and the process for making the glue by which the pieces of paper for garments are joined; also a list of some thirty varieties of paper and the uses to which they are applied.

Consul Annesley gives a list of 54 varieties of paper and a description of the shrubs Kaji, Makoso and Kajiso, and the methods employed in the manufacture of paper from their barks, and modes of cultivation. Whole pages are devoted to the different processes by which waterproof garments, handkerchiefs, hats, rain umbrellas, sun umbrellas, telescopes, masks, lanterns, fans, hair-strings, purses, oil paper for wrapping silks, etc., together making an interesting document, which, if read by our paper manufacturers may lead to inquiries that may result in the introduction of some of these paper-producing plants, and possibly some of the processes by which the Japanese make so many thin, useful and beautiful articles of every-day use from paper.

Now that the Japanese Embassy is with us, composed of men of intelligence, possessing a knowledge of their country's products and manufactures, and an acquaintance with men of nearly every trade or profession, or can command such an acquaintance, may it not be well to interview Minister DeLong in behalf of our agricultural and manufacturing interests, that, if he has not already, he may yet assist us through some of the members of the Embassy to a knowledge of the plants, their introduction and propagation, and the precise knowledge of the processes, by which many of their strange paper fabrics are made.

CRANBERRIES.—Again we hear a cotemporary for the hundredth time almost, telling our farmers that "we know of no other product that will pay better to cultivate on our swamp lands than the cranberry, and we hope our Sherman Island people will soon make the experiment."

If they make the experiment, we hope it will be on a limited scale, for there is not a probability of success. Sand, sufficiently moist and with as little vegetable mold as possible intermixed, is the soil for cranberries, and any attempt to grow them on our tulelands, sufficiently rich to grow a crop of weeds, would be wasted. "The meadows of Cape Cod," where cranberries are grown, yielding from \$500 to \$1,500 per acre, are meadows that have a surface coating of from four to eight inches of clean sand; if our tule lands have this, they are adapted to the growth of the cranberry.

BALLOONING.—During the Siege of Paris, sixty-four balloons left the city—of this number five only were captured by the Prussians, two were lost at sea, and all the rest (57), were successful.



PERSPECTIVE VIEW OF A SMALL HOUSE AND BARN.

are now weekly held by the clubs of Sacramento, San Jose and others, are, we are informed, particularly interesting to many of the readers of the *RURAL*, who, remote from

underground channels from ascending to the surface except where tapped.

That the rising of the water in the wells to a height considerably above the surface, must be



GROUND PLAN OF HOUSE AND BARN.

the larger centers of population, have no other means of arriving at or being benefitted by, the experience of others. Farmers' Clubs will please send in their reports to the *RURAL* as early after their meeting as possible.

BEET SUGAR IN MASSACHUSETTS.—They are making beet sugar on a small scale in Massachusetts at a cost of seven cents per pound. If they can do this in a country where the beets for winter working must be kept at great expense from severe frosts of that section for at least four months of winter, and where it will be difficult to find a thousand acres of land in a body of the proper character for beet-growing—which every beet sugar making company should have—what may we not do here with thousands of acres in a place of the very best quality of land and needing no manure, and a climate that admits of leaving the entire crop in the field, to the hour of their being wanted at the sugarie?

owing to a head entirely independent of, and quite above the surface, of the valley, admits of no doubt. As to the supply of water running in independent channels, the proof of this must be found in the fact that wells in the immediate vicinity of each other, force their waters to unequal heights above a common level. Until this is shown to be a fact, the theory of distinct channels, may not be entirely clear to everyone.

A STOCKTON ORANGE TREE.—In the garden of Mayor Holden stands an orange tree seven years old, which is now loaded with yellow fruit. It is a Pansma orange grown from the seed. It bore fruit when four years old; last year the Doctor picked about 100 full-grown oranges from its branches, and this year it is loaded down with fine large fruit. One acre devoted to the culture of the orange, is worth more than a whole farm for wheat growing.—*Republican*.

CORRESPONDENCE.

Raisin Grapes.

EDITORS PRESS:—I read in your paper of Dec. 16th a letter and its answer on Raisin Culture. I have been experimenting for the last few years in drying and putting up raisins. I think this valley well adapted to raisin culture. The atmosphere is very dry, and temperature equal during the summer and fall. I gather the grapes in September, and place them on scaffolds in the sun to dry. After they are partly dry, say in two weeks, I put them in the shade (under cover) to finish drying. I find that if left in the sun until dry enough to box, some will get too dry and become hard; but that by partly drying in the shade they are much better.

The Muscat of Alexandria makes the best raisin here, but does not produce as much as some other kinds. The average yield being about ten pounds to the vine; but they dry away less than any other variety, two pounds green making one dry.

The White Malaga is probably the next best variety. I have none of them in bearing, but saw some put up by Mr. Myers in this valley that were very fine.

The other varieties I have tried are the Bowker—a large white grape which makes an excellent raisin; Rose of Peru (purple); Fiber Zagos (white), and Flame Tokay, (large but inferior.)

The last four varieties will average at least twenty pounds to the vine, and will take three pounds of grapes to make one of raisins. I send you with this a box containing five varieties, namely: Muscat of Alexandria, Bowker, Rose of Peru, Fiber Zagos and Flame Tokay.

F. G. JEFFERDS.

Farmersville, Tulare Co., Dec. 29, 1871.

RECEIVED.—The box containing the five varieties of raisins came duly to hand. We give the Bowker the preference though there is little to choose between it and the Muscat of Alexandria. The whole five varieties would be called good raisins in any market, and go to prove that our grape growers have only to determine that they will produce raisins, and then with a few years experience in selecting those grapes that seem best adapted to their particular locality, and we need not go outside of our own State for a supply equal to our demands, and that of the great non-grape growing region of the interior.

We shall keep the specimens presented us, in our editorial rooms for the inspection of any who may feel interested in the growing of California raisins; and if any person has been as successful as our Tulare county correspondent, in the production of an unexceptionable raisin, we would not object to having a small box of them sent us just for comparison.

Benefits From Overflow.

EDITORS PRESS:—Since our people, whose premises were flooded along the banks of the Guadalupe and Los Gatos, have cleared away the drift and put things to rights, they have discovered that the overflow of the lands was a positive benefit. Orchards, vineyards and gardens which were merely submerged, have been enriched by alluvium and the ground so thoroughly moistened that they are thriving prodigiously. In addition to this, that indomitable little nuisance, the gopher, has been utterly extinguished in the wet localities. The destruction of these pests is a matter of special gratification to Mr. James Lick, whose rare plants and trees have been for years a constant prey to the pesky vermin.

Since the late rain-storm, the weather has been bright and pleasant, and you can rest assured that our farmers are improving each shining hour. Some idea may be formed of the attention which is being given to plowing and sowing when it is stated that there were scarcely farmers enough present at the Farmers' Club, last Saturday, to form a quorum, and the usual debate and other exercises announced to take place in this popular society, had to be postponed.

Dr. Lucky's lecture before the club was

deferred until a week from next Saturday. The Trustees of the Santa Clara Valley Agricultural Society have not yet made a final award of the Fair Grounds and race-track; but have taken the matter under advisement until a future meeting to be called by the chairman. As you are aware, this society owns one of the finest tracts in this vicinity, and it is gratifying to citizens of San Jose and Santa Clara to know that immediate steps are to be taken to embellish and beautify the premises.

San Jose, Jan. 20, 1872. S.

Evergreen Tree Culture.

Head Before the Farmers' Club, of Sacramento. January 13th, by E. F. Aiken.

[A press of other matter compels us to omit two or three of the less important paragraphs of this valuable essay.]

The evergreen, we all know, is a tree that has a perpetually green and living foliage. Some varieties have upright, needle-like leaves, while others have a broad and drooping foliage. The first mentioned are all of the cone-bearing family, or conifers, and this name they get from the form of the fruit which contains the seed, and not from the general habit of the tree, as some suppose. The seed of this class is the most minute and delicate of all our forest tree seeds, and it is well known that they will not grow in their natural state, only under peculiar circumstances and in certain locations, where the atmosphere is humid, and to that extent that the seed will not fail to germinate and the seedlings grow readily.

The seedlings are found in their natural state only in the depths of the forests, in cool and shady places, where the searching winds and the fierce and scalding rays of the sun cannot penetrate. The first year of their existence they are exceedingly delicate, a strong ray of sunlight or gust of wind often destroying the vitality of thousands. Hence we are taught by Nature the uncertainty of successfully growing evergreen trees from seed in our dry climate. It has required years of patient toil by experienced nurserymen, using every precaution known, and gathered by long experience, together with the great advantage of the humid atmosphere bordering our great lakes, to raise the seedlings successfully. They are now raised in large quantities by parties in the East who make the business a specialty, and can be imported here through the mails, at so little cost as to come within the means of all.

The whole family of evergreen and cone-bearing trees of our forests are valuable for timber, and are used to a greater or less extent, as regards their adaptability to the different branches of mechanical business. There are very few of all the numerous branches of mechanical business but what are more or less dependent upon wood as their material for manufacturing. How much more material is used that is derived from the evergreen and cone-bearing trees as compared with that originating from deciduous trees, I will not presume to say. We all know from experience and observation that the former is vastly in excess of the latter, and I believe it would be safe to say that seven-eighths of all the wood made into lumber and consumed in other ways is the product of this class of trees.

The white pine, Scotch pine, red pine, and Norway spruce, which I give you, as I think, in the order of their respective merits, are without doubt the most valuable sorts of this class for extensive and general planting, retaining their foliage as they do through the winter, when deciduous trees are leafless. As trees for shelter for stock on the farm, as windbreaks for our orchards, vineyards and grain fields, or as ornaments to beautify our homes, they cannot be excelled by any and have but few equals among deciduous trees in a commercial point of value. They are easily transplanted (while young) from the nursery and of thrifty and rapid growth, requiring much less moisture in the soil, and will flourish over a wider range of climate and accommodate themselves to a greater variety of soils than most deciduous trees. They grow well on uplands, hill sides, and on sandy and unproductive soils, and I believe are well adapted for extensive cultivation on our treeless plains throughout the State.

That these broad plains are wholly devoid of evergreen trees now is no argument against the rapid and successful growth of evergreen forests if once established by the hand of man. And I would here urge upon our farmers the necessity of making a beginning of forest tree planting, even if it be but a few hundred trees. Start them in nursery form if not prepared to plant them otherwise; plant seeds of the black walnut and locust, cuttings of the poplar, cottonwood and white willow, if you cannot procure seedlings of a better class of trees. They will grow and make shelter, and break winds, for the better trees to come after—but plant as many as possible of the sorts before mentioned, including the European larch. The last mentioned, though classed among the conifers, is not an evergreen, as it sheds its foliage in the fall. It has for several years been planted more extensively in Europe than all other trees combined, and is now taking the lead of all others among the planters of the Atlantic States.

The cone-bearing family of forest trees comprises some of the most valuable kinds of timber trees known, and there is no one variety of wood that is so extensively used in the great

and increasing demands of civilization as the pine. It is rightly named the "king of the evergreen forest." Immense forests of pine were formerly found throughout the northern portions of the United States, from Maine to Oregon, but now large forests of the old growth east of the Rock Mountains are rare. In the old State of Maine, once so famous for her vast forests of pine, and great foreign lumber trade, there are to be found but few of the original growth standing, and as a substitute for pine, hemlock and spruce are now extensively used, and in nearly all of the older States the scarcity of pine is severely felt.

Arthur Bryant, in his new work on "Forest Trees," says: "The State of New York, which not many years since exported great quantities of pine lumber, now obtains a supply for home consumption from abroad, and it may be safely estimated that two-thirds of the full-grown timber in Northern Illinois, has been destroyed within the past eighteen years." With the ravages of fires that have recently swept through the timbered portions of our Northwestern States, and the increased demand for lumber consequent upon the rapid increase of population, the home supply for the future demands of civilization will soon be practically exhausted.

Large tracts of the best timbered lands of our State within a few years past have been monopolized by stock companies as speculators and passed into the hands of railroad corporations as subsidies, and this concentration of our great forests of timber in the hands of men who have no consideration but the mighty dollar to be coined out of them, must surely and speedily enhance the price of lumber. It is to be hoped there will be, during the present session of the Legislature, some systematic plan devised which will bring about extensive and wide-spread experiments in the different methods of forest tree culture in all its different branches and forms throughout the State. There is no question concerning our future prosperity as a State which will come before it more important or more necessary for its immediate action and fostering care than this. No efforts of private individuals will serve to so forcibly impress upon those engaged in agricultural pursuits the importance of extensively planting out forest trees as to have our Legislature take some action worthy of an interest of such vast importance to our State.

Home Products.

Our grape growers and orchardists are gradually lessening the importation of many varieties of the more valuable fruits, nuts, etc., that formerly made no small item of our imports, though it will be many years before we shall be able to furnish the great interior basin of our continent with a moiety of its demands, without large importations from foreign countries. The Commercial Herald commenting on this subject, says:

Our direct Malaga trade, which for several years past has been of considerable importance to this port, seems to have departed; the charm of importing entire cargoes of raisins, etc., being dispelled by the continental railroad, cutting up, as it were, the wholesale importing trade in fruit, which heretofore required at least two or more full cargoes. Again, in past years, cargo sales of raisins were in order, either through a broker or auction, but now this important traffic has, like some other branches, dwindled into insignificance, and we fear, never to be reinstated. We say fear, as it is hardly probable that we will, in less than ten years time be enabled to raise and prepare for market a sufficiency of the native product to meet the wants of this coast; but the time is not far distant when we will produce raisins, figs, almonds, English walnuts, etc., in great abundance, as we do now oranges, lemons, etc. As for figs, our growers have much to learn regarding the proper mode of drying in order to compete with imported supplies; so, also, in regard to prunes, and other dried fruits.

The market is now temporarily supplied with dried apples, peaches, plums, apricots, etc.; but the consumption of the first named article is so large on this coast that it is probable, as in the past year, and heretofore, more or less will be drawn from the Atlantic States—and why? simply because growers on this coast will not take the time or trouble to dry the fruit for market. We continue to import considerable supplies of Zante currants, Hungarian prunes in casks; also French prunes in glass and tin. From the East we have received by rail, the past few months, the bulk of 3,000 bbls. cranberries; ruling from \$17 down to \$13.50 per bbl., for those in prime condition.

In 1871 twenty-nine vessels arrived here from Tahiti, with 5,120,000 oranges, 106,000 cocoanuts, against 3,920,000 oranges, 93,250 cocoanuts, for the corresponding time of 1870, besides 500,000 oranges from Mexican ports. Besides this, our native

product from Los Angeles County, for the season, extending from December to June, was 1,535,000 oranges, and 228,000 lemons; also pomegranates, citron, walnuts, etc. The new crop of California oranges is now arriving from the lower coast counties, and promises a considerable increase over past years. In addition to the above we receive from the Hawaiian Island a few oranges, and considerable quantities of bananas, coconuts, and other tropical fruits.

AGRICULTURAL IMPLEMENTS IN CALIFORNIA.—The business in this department has essentially changed hands within the past five years—it is less concentrated, several of the largest houses having retired from the traffic, and the trade more cut up than heretofore; besides, now the bulk of the goods come via. rail, direct from the manufacturers in Chicago and other cities of the plains. Extreme high prices no longer rule, as dealers can now order goods by the car load, and are received, in due course, in short time, not requiring large capital, as heretofore, in bringing heavy stocks from the East in a six months' voyage. The old stock of implements, horse-power, etc., will no doubt find a market this season, as there is every reason to expect large crops—business of all kinds will be increased on this coast from this cause—merchants and business men generally hoping now to retrieve past losses occasioned by the last two years of drouth. Eastern farm wagons are now largely used on this coast; being made where lumber is cheap and wages low.—*Com. Herald.*

Our Imports for 1870-71.

At least once a year every farmer, manufacturer and merchant should have brought to his mind the fact, that the people of the United States are still enormous importers of a great many articles that we ought to be the producers and exporters. That we should pay annually for wool and manufactures of wool and worsteds, the large amount of \$52,766,068.37, seems incredible, and yet this is but a single item among many that drain us of an enormous amount of our specie wealth, the aggregate of which is but little short of \$520,000,000.

The annual report of the Chief of the Bureau of Statistics on Commerce and Navigation gives the total value of the foreign merchandise imported and entering into consumption in the United States for the fiscal year ending June 30, 1871, at \$518,759,518.32, upon which the aggregate duties amounted to \$202,446,673.32. Of these importations merchandise to the value of \$340,938,407 was received at New York, paying \$139,226,299.17 in duties.

Among the principal articles of foreign production entering into consumption in this country are manufactures of cotton to the value of \$26,587,994.71, paying duties to the amount of \$10,773,832.48; silk, manufactured and unmanufactured, \$31,086,252.02, paying \$17,965,819.85; wool and manufactures of wool and worsted, \$52,766,068.37, paying \$33,539,475.93; flax, linens, etc., \$19,235,959.55, paying \$6,475,953.72; hides and skins, \$13,431,781.27, paying \$1,343,178.14; leather, manufactured and unmanufactured, \$10,522,135.34, paying \$3,839,679.50; tea, \$11,274,488.67, paying \$8,322,994.67; coffee, \$29,428,698.27, paying \$10,969,098.77; sugar confectionery, cane juice and molasses, \$70,802,398.69, paying \$32,585,120.16; spirits and wines, \$7,831,272.96, paying \$8,432,078—duties amounting to \$600,805.31 more than the value of the goods, iron and steel, manufactured and unmanufactured, \$43,256,119.68, paying \$18,658,683.95 to the revenue of the United States.

It will probably surprise a good many people in this country, and would astonish more in Europe, to learn that boards, plank and scantling to the value of \$6,555,192, have been imported into the United States during the year, to say nothing of several hundred thousand dollars worth of rough timber, and over \$200,000 worth of fire wood.

WOMAN'S INFERIORITY.—Prof. Fowler in his late lecture in this city asserted among other things as evidence of the ineligibility of woman's claims to equality with man, that she had never invented anything, and was but an indifferent poet, and had never produced a national hymn. A cotemporary in alluding to this preposterous assertion respectfully asks:—"Did he never read the book entitled the 'Inventions of Woman'?" Did he never hear of the 'Battle Hymn of the Republic'?"

MECHANICAL PROGRESS.

Titanic Iron and Steel.

Considerable attention was drawn, three or four years since, to the manufacture of a very superior iron made from an admixture of titanic iron ore, with other more common ores of iron. Numerous experiments were made in this direction in the production of the mixed iron as above, of iron from the titanic ore exclusively, and of a steel, the latter more generally known as "Mushet's Special Steel." Extensive works were put up in England for the manufacture of these superior qualities of iron and steel, but the difficulties encountered in the reduction of the titanic ores (or sands as they generally occur) seem for a while to have operated as an effectual discouragement to the expenditure of money for this purpose by capitalists.

We have lately, however, seen some evidences of a renewal of efforts in this direction, by a new company, located at Sheffield. This movement, according to *Engineering*, appears to have resulted from the successful persistency with which Mr. Mushet has advocated the use of titanium in the production of high class iron and steel. The extraordinary strength and toughness of Mr. Mushet's titanic steel as shown by Dr. Fairbairn's experiments, was the subject of remark in these columns at the time of those experiments being made public. "More recently" says the journal above named, "we gave from personal observation some particulars of the remarkable properties of Mr. Mushet's new non-hardening special steel. Now that the manufacture of these steels has passed into the hands of Messrs. Samuel Osborn and Co., they will doubtless be still more extensively used. When speaking some time ago of the non-hardening special steel, we directed attention to its endurance when used for tools in machines driven at higher speeds than usual, and, at the present time, when with the shorter hours of labor it has become more than ever an object with engineers to get as much work out of their lathes and planing machines as they can in the shortest space of time, this point is worthy of notice."

In view of the growing importance which must soon attach to this description of iron ores by means of its peculiar adaptability to the manufacture of steel, and its almost entire freedom from sulphur and phosphorus, it may be interesting to know, that while English ironmasters are thus far almost entirely dependent upon the distant island of New Zealand for their supply, they occur abundantly in the United States.

The principal deposits of titaniferous iron ores in this country are in Northern New York, Missouri, Tennessee, North Carolina, Virginia, and Maryland.

The deposits in the northwestern part of North Carolina, owned or controlled by a Philadelphia company, have been found by a recent survey to extend in almost a continuous line for over 300 miles. The deposits, which affects the form of a nearly vertical vein, has a thickness of from 4 to 10 ft. The per cent. of titanic acid varies, but is about 10 on an average. The supply of ore may be considered as inexhaustible, and charcoal is abundant everywhere. Bituminous coal-fields will be soon reached by projected railroads.

Titanic iron ore in the form of sand is found on the ocean beach to the westward of this city (San Francisco), and a company was organized some few years since to take up and work this deposit.

THE IRON INTEREST OF THE UNITED STATES.—EFFECT OF FREE TRADE UPON IT. Kluepfel, a German writer of much distinction, and well versed in the iron trade, has written a carefully considered series of articles for a German periodical, in which the conclusions arrived at are, that if the present tariff were done away with and free trade substituted; 1st, the production of cheap pig metal of inferior quality would be impossible east of the Alleghenies, owing to the lack of cheap ores and the cheapness with which the metal could be obtained from England. Besides, the production of malleable iron would only be possible to a slight extent, owing to the cost of coal. On the other hand, the production of a large amount of foundry iron, as well as forge pig, might be possible. The foundry iron could be used in the vicinity of the works, while the forge pig could be sold to the Pittsburg, etc., rolling mills. 2d, it would be impossible to produce considerable amounts of pig metal in Western Pennsylvania, owing to the lack of ore. On the other hand the production of

wrought iron and cast steel from pig metal imported from other places could be done on a large scale. 3d. The same conditions would be true for Northern Ohio as for Western Pennsylvania, while it is probable that a small district exists in Southern Ohio where blast furnaces and rolling mills could be profitably worked. 4th. The production of all kinds of pig metal could be carried on profitably in Michigan, Wisconsin, and the other States bordering on the Great Lakes. 5th. The same is true of Eastern Missouri.

Fire-Proof Buildings.

The Providence *Journal* publishes the following extract of a letter from the Sculptor Powers to a friend in Rhode Island. It furnishes some valuable and timely hints with regard to the construction of fire-proof buildings:—

But it may be asked, "Is it possible to make a city fire-proof?" I answer, yes, and without any great extra expense. To prove this, I have only to say that although there have been frequent fires in the city of Florence during the thirty-four years of my residence in it, not one house has been consumed, except a theatre, and that was not entirely destroyed. Rooms, full of goods, have been heated like ovens by ignited calicoes, straw hats, etc., but as the floors above and below were all covered by thin brick tiles, the goods burned without ventilation. And as there was no flame, a smell like that of a coal pit soon gave the alarm, and the fire was soon extinguished by no other engine than a squirt holding about a gallon, which discharged a well-directed stream through some aperture. I once beheld some firemen marching to a fire in Florence. First were three men with picks, next four men with buckets, then three men with highly polished brass squirts on their shoulders; all marching with an air of pomp and importance! The fire was at the residence of Mr. Clevenger, the American sculptor, and had been burning 24 hours on the end of a joist just under his fire-place. He had smelt something like a coal-pit for some time, and at length perceived smoke rising from the brick floor. On going below he found the room full of smoke, and a rush-bottomed chair just under the joist was partially consumed. But the joist was not yet burned off, and why? Because the fire was bricked down. It could not rise and burst into flames.

The secret of fire-proof building, then, is this: It must be made impossible for the flames to pass through the floors or up the stairway. If you will have wood floors and stairs, lay a flooring of the thickest sheet-iron over the joists, and your wood upon that; and sheath the stairs with the same material. A floor will not burn without a supply of air under it. Throw a dry board upon a perfectly flat pavement and kindle it as it lies if you can. You may make a fire upon it and in time consume it, but it will require a long time. Prevent drafts, and though there will still be fires, no houses will be consumed. The combustion will go on so slowly that discovery is certain in time to prevent any great calamity. But the roofs, how about them? Slate or tiles? Zinc melts too easily. I believe that hard burned tiles, if flat, would stand the frost at home; and if so, they constitute the best roofing. My house has no joists. All the floors are of tiles resting on arches. One of these arches was made over a room twenty-five feet square, by four men in four days. The brick are about one and one-half inches thick, and laid edgewise, with plaster of Paris. There was no framework prepared to lay them on unless you would so term four bits of wood which a man could carry under his arm. And yet this arch is so strong as to be perfectly safe with a large dancing party on it. I never have heard of one of those floors falling, and they are absolutely fire-proof. Of course light arches like these would not do for warehouses. It would pay, I think, to send out here for an Italian brick-mason who knows how to build these thin but strong arches for dwelling houses. I know that there is a prejudice at home against brick or composition floors. "Too cold in winter," it is said. And so they are, if bare, but cover them with several thicknesses of paper and then carpet them, and no one can discover the slightest difference between their temperature and that of wood floors. Who doubts this let him try the experiment with the feet of the thermometer. The truth is that the brick or composition floor is no colder in itself than the wood—the thermometer attests this—but it is a better conductor. I do not insure my house, as I know that it is not combustible.

SCIENTIFIC PROGRESS.

A Substitute for the Spectroscope.

E. Lommel has devised three very simple instruments called the *erythrophyscope*, the *erythroscop*, and the *melanoscope*, which can be advantageously used, instead of the spectroscop, for the detection of substances by their colors and colored flames. Two colored plates of cobalt blue and dark yellow oxide of iron glass are laid upon each other, and, by inserting them in black pasteboard, with a slit for the nose, something like a pair of spectacles is made of them. The combined glasses are only transparent for the ultra red, for yellow green, for blue green and blue rays; and they cut off all other colors. Substances, known to possess these colors or to impart them to the flame of a spirit lamp or Bunsen burner, can be detected by viewing them through such spectacles. The *erythroscop* consists of a cobalt glass and ruby glass, which only admits the ultra red, beyond Fraunhofer's line B, to pass. The third combination, called the *melanoscope*, consists of a dark red and clear violet glass which only allows the middle red tints to pass. Anyone who possesses the facility of alternately using the right and left eye, could employ two combinations at once and thus cover nearly the whole length of the spectrum. For the use of students in laboratories, we should think that the simple arrangement described above could be frequently employed to advantage for the detection and separation of a large class of bodies which give characteristic colors to flames; and, by practice, the learner would soon be able to assign the true position to each color nearly as well as if he used the scale usually attached to the spectroscop.

Olive Oil as a Purifier of Carbonic Acid.

In the manufacture of carbonic acid for mineral waters and soda fountains, in consequence of impurities in the limestone employed for the evolution of gas, certain disagreeable empyreumatic oils and offensively tasting gases are apt to go over; and, unless separated in some way, they will impart an unpleasant flavor to the mineral water. To obviate this difficulty, E. Pfeiffer suggests saturating pumice stone with olive oil, and passing the gases through it in the usual way. The oil absorbs the bad gases, and can be regenerated for subsequent use by heating it to expel the absorbed impurities. After becoming quite impure, it is still suitable for the manufacture of blacking or for application as a lubricator. It is said that Mallett employed this method to absorb the hydrocarbon products in his process of obtaining ammonia directly from coal tar. As much of our limestone contains organic matter, which gives a peculiar smell to carbonic acid made from it, this method of purifying the gas by passing it through olive oil is worthy of trial.

TO DEODORIZE KEROSENE OIL.—The odor of a substance is in most cases adherent, like color or any other physical property, and not accidental or extraneous. Where, as in the case of kerosene oil or the lighter petroleum naphthas, the substance is a mixture of many constituents, it is difficult to decide which of them is the objectionable one, and so long as this has not been determined, we can devise no rules for getting rid of it, or for destroying it in any other way. Practically, therefore, we are unable to deodorize the products, and especially the lighter ones of the distillation of petroleum; but we may conceal them in the same way as formerly the disagreeable odors incidental to sick rooms and even to ordinary apartments were hidden by the liberal use of strong smelling liquids or the fumes of incense. The best adapted fluid for this purpose is, perhaps, the artificial oil of bitter almonds or mirbane oil; a little of it will go a great way in disguising the odor of petroleum effectually, and as it has a very high boiling point, it will accomplish its purpose most durably.—*Druggist's Circular*.

SEPARATING FIBRES.—In a recent number of the *Moniteur Scientifique* a paper was contributed by Dr. E. Kopp, on the "Means of Detecting and Separating Silk, Wool, and Vegetable Fibres from each other" by hydrochloric acid. The practical bearing of this discovery was exemplified by the immersion of several so-called pure silk ribbons and other fabrics in the acid, when the silk was dissolved, leaving the adulterated material intact. Somewhat similar experiments were made last year by Mr. John Spiller.

Recent Progress in Chemistry.

I wonder what Sir Humphrey Davy would have said to any one who talked about stellar chemistry. That great man, in ridiculing the idea of lighting London with gas, triumphantly asked the fanatics who proposed such a wild scheme, whether the dome of St. Paul's was to be the gasometer? Yet we cannot imagine Regent street illuminated, or rather darkened, with dips again, and to us stellar chemistry has a real meaning. Who will venture to bound a science which reaches far away through space, and with unerring accuracy tells us the composition of distant worlds and distant suns? What can be more humiliating to our small intelligences than the reflection that a distant star will photograph its spectrum on a sensitive surface with the ray of light that left it when the oldest man in this room was a boy? What would the great father of British chemistry have said, had he stood in the lecture room of the Royal Institution, where his great discoveries were made, and seen the burning hydrogen extracted by our great countryman Graham, from a meteorite, the heat and light of another world; or could he look with Lockyer on the burning flames of hydrogen, which dart up from the sun to a height of 50,000 miles, or could he read the flashing telegrams which run so rapidly round our world, that all our notions of time are completely upset, and we actually receive intelligence to-day which was sent to-morrow? Excuse the apparent absurdity; it only shows how powerless language is to keep up with human progress. Had he lived with us, he would have seen a large city dependent entirely for its communication with the outer world by a marvellous kind of photography, so minute that it enabled a pigeon to carry a proof sheet of the *Times* under its wing.—*E. C. C. Stanford*.

DETERMINATION OF SULPHUR AND PHOSPHORUS IN IRON.—The presence of the least trace of phosphorus and sulphur in iron will destroy it for many purposes, and a correct and easy way of detecting these substances is therefore of importance. K. Meineke dissolves the finely pulverized iron in chloride of copper, separates the reduced copper by treatment with an excess of chloride of copper and common salt, filters through a layer of asbestos, brings the insoluble portion adhering to the asbestos into a breaker glass and oxidizes by strong nitric acid and chlorate of potash; then he evaporates with hydrochloric acid and determines the sulphur by baryta, as sulphate, and the phosphorus by molybdic acid in the usual way. The novelty of this method is in the substitution of chloride of copper for the chloride of iron employed by other chemists, and its advantages are said to be in the greater facility with which the various liquids and solutions can be filtered. It also yields more accurate results than the former methods.

A NEW LIQUID FIRE.—Guyot says that when bromine and flowers of sulphur in excess are mixed together in a close vessel, and filtered through asbestos, a reddish, oily fuming liquid, hyposulphurous bromide, SBr₂, is obtained. When treated with ammonia, it soon begins to boil violently, evolving copious white thick fumes. The same action takes place when the bromide is mixed with carbon disulphide, but the heat evolved is not sufficient to inflame the CS₂, unless a fragment of phosphorus be previously dissolved in it. A liquid made of this mixture, and containing phosphorus, the author proposes to call "the new Lorraine fire." Rectified petroleum may be substituted for the disulphide.

MAGNETISM.—A. Casin, after describing a new method of measuring magnetism, (the method not given in the journal before us), gives the following law for the magnetism of electro-magnets: "When the core of iron fills exactly the coil of an electro magnet, the quantity of magnetism is independent of those parts of the core which are beyond this coil."

A NEW PROCESS.—*Comptes Rendus* contains a posthumous paper by E. L. Rivot, for a new process for treating gold and silver ores, the main feature of which consists in causing the steam to act at a high temperature on the mineral sulphides.

CLEANING GLASS VESSELS, which have contained petroleum, may be effected by milk of lime, which forms an emulsion with petroleum, and by chloride of lime, which destroys the smell.

The Fluke-Rot in Sheep.

In our issue of Dec. 16th, we published a communication from James H. Shortridge, of Cottage Grove, Lane Co., Oregon, giving an account of a disease which has been doing much mischief among the flocks in his neighborhood during the past season. He says that the cause of the disease is leeches in the liver, and asks how they get to that organ. The sheep affected were such as had fed on low ground, and drank from stagnant pools.

The Name and Extent of the Disease.

There can be little doubt that this is the disease commonly known as the "rot," or to distinguish it from the "foot-rot," the "fluke-rot," or "water-rot." Probably no malady is more wide-spread or destructive among sheep, although from the peculiarities of our climate, California may have been singularly free from it. Youatt in his excellent work on sheep, in speaking of its ravages in Great Britain, says: "So far as the author has been enabled to ascertain, more than one million of sheep and lambs die in every year from this disease. In the winter of 1830-1 this number was far more than doubled; and had the pestilence committed the same ravages throughout the kingdom which it did in a few of the midland, eastern, and southern counties, the breed of sheep would have been in a manner extirpated." He also speaks of its terrible effects in Europe, from Norway to the southern part of Spain; in North America, Van Diemens' Land and Australia. In the winter of 1809 scarcely a Merino escaped from it in all France. Although this disease attracts most attention when it takes the form of an epidemic, still large numbers of sheep die in ordinary years in those districts which are subject to it.

Where Most Likely to Occur.

It has been noticed from early times that certain localities seemed to be infected with the disease, and often to such an extent that if sheep were allowed to feed but a few hours they were sure to have the rot. In general, the pastures to be avoided are such as are marshy, particularly if there are stagnant pools in them. Wet alone is not sufficient to cause the disease, for in time of freshets, when obliged to wade for food, sheep often do well, and show no signs of rot afterwards. When the water subsides, and before the ground becomes dry, there is great danger of mischief. In very wet seasons upland pastures, which are usually dry and free from rot, often prove as bad as any marsh. Sometimes the mischief may be traced to some pond-hole or small marshy spot which has been left undrained, and considered of small consequence. An English farmer whose flock occasionally suffered from the rot, although they fed on dry hilly lands, finally suspected that the cause of the mischief was a swampy pond to which they had access. He therefore fenced in the wet place so that the sheep could not reach it, and the rot entirely ceased.

Symptoms.

Those who are not familiar with this disease would not be likely to suspect its presence before it had made considerable progress, but those who have had experience soon detect it by symptoms that are not easily mistaken. When first attacked the animal appears dull and sleepy, and has not a good appetite. The skin, especially about the brisket, loses its natural color and becomes yellowish. The white of the eye looks paler than in health, the veins being filled with a yellowish fluid instead of red blood, and the gland at the corner of the eye also becomes yellow. As the disease progresses, the veins of the eye become darker, sometimes quite brown; showing that bile is mixed with the blood. The membranes of the nose and tongue become livid, and the breath is very offensive. The bowels are irregular, and there is much fever. The skin becomes loose and flabby and crackles when pressed, and often black or dark yellow spots appear upon it. The wool comes off easily. The belly becomes distended with watery accumulations in the tissues and between the organs. Sometimes there is a swelling of the upper part of the throat, as described by our Oregon correspondent. The English farmer then says that the sheep is *choked*, or has the *watery poke*. During the progress of the disease, if the hand be pressed upon the loins of the animal, or on the region of the liver, signs of pains are manifested. When first attacked with the rot sheep take on fat

with unusual rapidity, but as the disease progresses, this unnatural fat disappears, and they become very thin and weak, and finally die.

The time which it takes for the disease to run its course is usually from two to six months.

A Post-Mortem Examination.

If a sheep that has died of the rot is opened, the tissues and viscera are found to be very much disorganized. They are lighter colored than usual, and full of a yellow serous fluid. The lungs and heart are usually much diseased; but the liver is the organ that seems to be the center of the disorder. It is sometimes pale, and at other spotted; in its substance are ulcers, and the bile ducts are full of parasites called *flukes*, not leeches. Sometimes nearly a thousand of these worms may be found in a single sheep's liver.

What is the Ultimate Cause of the Rot?

This is a question that has been much discussed, and many very different conclusions have been reached by investigators. Youatt held that the rot was produced by miasmatic gases arising from decaying vegetable matter—that these gases arose only when the soil was neither dry nor overflooded, but in a sodden state. He gave various examples to show in how short a time animals might be infected; in one case a flock stopped but about fifteen minutes to drink at a pool, and over 200 of them



became rotten. Youatt's views were quite generally accepted in his time, and are now quoted in most, if not all, of the manuals on sheep-raising, but more extended observations and investigations have not supported them. Thus Randall remarks that large portions of the United States where the rot is not known have bogs and marshes exhaling their gases, and still supporting sheep in health. Again, Youatt did not believe that flukes caused the rot, but rather that they became abundant in the liver when its diseased condition favored their increase. He also assumed that if the flukes existed in the water which the sheep drank, they must have the same form as when found in the liver. This also has been disproved by the microscope of the naturalist.

It is now known that in the course of their existence flukes undergo changes of form quite as remarkable as that from the caterpillar to the butterfly.

Natural History of the Flukes.

There are several species of flukes known to the naturalist. Of these, two are most common in the bile-ducts of sheep, one in the bile-ducts, and two in the stomach of cattle, and one in the cat. The species which is commonly found in sheep, which have died of the rot, was named *Fasciola hepatica* by the celebrated Linnæus. Its body is very flat, rather oval in form, and in color a pale brownish or greenish yellow, with occasionally a faint rosy tint. The size of this species is usually about three-fourths of an inch long by one-half of an inch wide, but it may be much larger. Our figure, which is copied from Prof. Verrill's work on parasites, represents the underside of the fluke.

The mouth is at the bottom of the small sucker, *a*, and communicates with a small dilated oesophagus from which two digestive tubes extend to the posterior part of the body, sending off many side branches, *d*. Through the skin of the back of the fluke, there can be seen, with the help of a common lens, another system of branching tubes, which collect, and dispose of, the waste matter of the system.

Mode of Development.

The following quotations are from Prof. Verrill: "The fluke is very prolific. Prof. Lenekart estimates that the ovaries may at one time contain 45,000 eggs. The eggs that are discharged pass out of the intestines of the sheep."

Those that get into water or moist places hatch after several weeks, producing minute conical embryos, which are covered with vibrating cilia or lashes, by means of which they swim freely about in the water.

In a few days the external skin, with the cilia, is cast off, and after that the embryos are obliged to creep about. Its further development has not been traced; but it probably has a history similar to that of flukes of which the entire history is known.

Therefore it is supposed that the young em-

bryos, above described, attach themselves to the bodies or enter the tissues of the fresh-water snails. * * * In this situation the form probably changes, and they become the so-called "nurses," and a brood of larvae of another form is developed in their interior, by a process of internal budding. These larvae have a form somewhat resembling minute tadpoles. * * * They are finally discharged from the body of the "nurses," and escaping from the snails, may again swim actively about in the water; but eventually they, in all probability, again enter the bodies of other small snails, and losing their tails, become encysted in little capsules. Finally these snails, with their parasites, are swallowed by sheep and cattle, while adhering to the herbage growing on moist land, or when adhering to water-cresses they might be swallowed by mankind.

"In the stomach and intestines of these higher animals they are again liberated from their cysts. They then gain access to the liver, where they rapidly become mature. The eggs are exceedingly minute and may be diffused in various ways, as by rains, winds, insects, and the feet of animals, and getting into water, or moist situations, they are ready to hatch and commence another series of transformations. The history of most of the flukes, which have hitherto been fully investigated, agrees in the main with that above given, and there can be little doubt but that this will prove to be the case with the common fluke, when its full history shall have been ascertained.

"The liver-fluke is one of the few internal parasites that is capable of living in several very different animals. It is most common in sheep; less so in cattle, goats, horses, and the ass; and quite rare in man. It has also been found in the hog, elephant, camel, beaver, squirrel, rabbit, hare, deer, and antelopes of several kinds, and in the great kangaroo. It is chiefly found in the gall-bladder and bile ducts; but occurs also in the intestine, and sometimes in blood-vessels."

With this history of the development of the fluke before us, many of the mysteries which formerly hung about the "rot" are easily explained. Thus, districts, which appear to have all the requisites for producing the disease, may be destitute of such fresh-water snails as the embryos undergo their transformations in. The freedom from rot of some pastures covered with flowing water, and the deadliness of others where the water is stagnant, depends not on the exhalation of gases, but on the unfavorable, or favorable, conditions for the multiplication of flukes. It is easy to understand also that the water of a stagnant pool, and the snails on the herbage about it, may be so infested with the embryos of flukes that if sheep be allowed to drink there but once, and feed there but a few minutes, they will be almost sure to die of the rot.

Prevention and Cure.

To avoid the rot, keep sheep on well drained pastures, where the water is pure and living. If the flock is already infested with flukes, remove at once to the most favorable spot at command, which should be dry and sheltered. As a medicine, salt stands first, and should be supplied so that the sheep can eat all they will. Youatt recommends giving the salt in doses of two or three drachms, morning and night, until signs of improvement appear, then a drachm or two of powdered gentian or ginger root may be added to the salt.

In condemning marshes as sheep pastures, an exception should be made in favor of those which are salt; they are usually free from rot, and in fact, the best hospitals for sheep attacked by it. In Egypt where the rot commits great havoc after the overflow of the Nile subsides, the Bedouin shepherds find that the best remedy is to drive their flocks to the sandy deserts where their principal food is the salt-wort; although a farmer should do his best to better the condition of his sheep when he finds them attacked by the rot, he must not be disappointed if his efforts fail in a majority of cases. Better apply the ounce of prevention before the cure is needed.

Sheep and cattle will be much less likely to get the fluke, and several other parasites, if their drinking water comes from some source which does not receive the surface washings of the pasture, and is given them in a clean tinor trough.

Some of our California shepherds may think that we have given more space than is necessary, to a disease which never troubles their flocks. We wish, however, to give such useful information as we can to our Oregon friends, as well as those nearer by. There is no telling either how soon the rot may be slaughtering the California sheep by the hundred. It is better to be forewarned and forearmed. We should be glad to receive alcoholic specimens of the Oregon flukes, and such snails as may be found in the water or on the herbage of the fatal pastures. One or two homeopathic vials would hold them, and if well sealed and packed in cotton in a small paste-board box, they could be sent by mail at a very small expense. After changing the alcohol once or twice it could be turned off, and the specimens sent a considerable distance without injury, if tightly closed.

Santa Cruz Farmers' Club.

The Club met on January 6th, President Mattison in the chair.

Mr. Locke—Our present Legislature will enact a new fence law—or perhaps only repeal our present one—and it may be well for the farmers of Santa Cruz to consider how their interests will be affected by this matter.

Mr. Kinsley—Can we do without division fences? If not, then we should have a good law that will keep us all straight, for without one there would be constant quarrels and the man who wished to take good care of his stock must either make all the division fence or enjoy the vexation of seeing his neighbor's stock fattening upon his best feed. The right thing is for each to do his part and do it well.

Mr. Feeley—Our present law is worse than no fence law, you can compel a man to pay heavy damage, whether you have sustained any or not, provided you can corral his stock. It is an open question in my mind whether we should have a fence law or not, but we certainly do want the present one repealed.

Mr. Sawin—It would be a blessing to the lower counties to have all fence laws repealed and stock men compelled to take care of their stock.

Mr. Mattison—A man has no right to keep stock unless he takes care of it. I shall take care of mine and want others to do the same. Laws have to be made only for those who will not live up to the Golden Rule.

Mr. Morgan—But here in Santa Cruz County we must have fences, for without them we cannot manage our own stock. When I turn mine out I would like to know where to find them. A man who is not able to fence land is not able to own it, and each should be compelled by law to make his share of division fence. It is nonsense to talk about farming in this county without fences.

Mr. Locke—And the nonsense of such talk has a wider application—yet with other counties we have nothing to do. Considering the broken nature of this county, and the abundance, cheapness and excellence of fencing material, there is reason to conclude that the interest of the whole farming community requires a good fence law that will compel each man to make his half and make it well. Possibly it would be a good thing for some of us if the strong arm of the law could reach inside fences and compel needed improvements.

The whole subject was referred to committee—Kinsley, Locke and Feeley to report at next meeting. All farmers of the county invited to attend, that public feeling in regard to this matter may find expression.

POST OFFICE CHANGES.—The following changes in the Pacific States and Territories, for the week ending January 6th, 1872, have been announced:

Postmasters appointed—Julian, San Diego County, Cal. Harvey W. Harver. Warm Springs, Deer Lodge County Montana, E. Gerard; Springville, Jefferson County, Montana, John Bayliss; Caelharas, Huerfano County, Colorado, John F. Read.

Name and site of Barrett's Mill, El Paso County, Colorado, changed to Southwater, on the Denver and RioGrande Railroad, and Pierce Wallihan appointed Postmaster.

LIME IN TRANSPLANTING.—It is asserted in an English publication of great merit, says the *Germantown Telegraph* that a large plantation of trees has been formed in that country within a few years past, without the loss of a single tree; and this, says the writer, has been effected simply by putting a small quantity of lime in the hole before introducing the tree. Four bushels of lime are said to be sufficient for an acre. The lime should be thoroughly mixed with the loam, in order that it may be reached by the roots, with equal facility, in every direction, as its principal effect is to push forward the tree during the precarious stages of its growth, and when the new fibres, beginning to start and ramify from the tap and laterals, require a supply of readily appropriable and nutritive matter, throughout their whole extent.

I have often used lime—generally its hydrate in transplanting fruit and ornamental trees, says the writer, and always with the best results.

The farm has produced some of the best specimens of manhood in all times.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE COUNTY—*Enterprise*, Jan. 20: **NEW TEXTILE FIBRE**.—Phormius Tenax, or New Zealand Flax. We have examined samples of this fibrous plant at the yard of Messrs. Hallet & Williamson, Main street, opposite the Union Hotel, and for tenacity and length it cannot be excelled, at least for the manufacture of a coarse fabric or light cordage.

CHICO ORANGES.—Mr. A. H. Chapman, favored us this week with an orange, one of five, from a tree grown at his place on "Chapman's Addition." It is well matured, and demonstrates the fact that with due attention, the best quality of oranges can be produced in this climate. Mr. Chapman says that the tree from which the one he gave us was taken, received no more than the ordinary attention given to his other fruit trees.

PLOWING.—In every direction, in this vicinity, where the ground was not too damp, plowing commenced on Monday morning, and is now being prosecuted with great vigor. Mr. Cochran informs us that he is turning over 75 acres daily on the Chico farm. During the wet spell all the plows have been pointed and sharpened, and with thirty days of good weather a very large area of land will be under cultivation.

CALAVERAS—*Chronicle*, January 13: The earth is as full of moisture as a saturated sponge, and it oozes from every pore like perspiration from a Fourth of July orator. The ground is so soft that a plow leaves no more trace of its passage than sticking your finger in a glass of water does. We think it has rained enough. The farmers and miners appear tolerably well satisfied and the last gopher has received his quietus.

CONTRA COSTA—*Gazette*, Jan. 20: **PLANT TREES**.—Now is the time to set out trees. Let the fast growing varieties be set along fences and roadsides. Why wait another day; why let the aspect of homes and neighborhoods present such a cheerless, comfortless appearance as a treeless spot always gives. Homes are no homes without pleasant surroundings. Cultured trees are evidences of refinement. Barbarism is put further off by the solace of shade trees. The value of homes and farms is augmented by the tasteful arrangement of near leafy companions. They protect the soil. They temper the heated and chafing atmosphere.

Now the deeply moistened soil will give them generous nourishment; make haste and have a profusion of trees in and about Pacheco.

A FIELD AGAIN. The pleasant weather since the storm has rapidly dried off the superfluous water upon the surface of the soil so that in many places it is in good condition for plowing; and even where it is a little too wet yet, the season is too far gone, and winter stock of feed, also, to justify the farmers in leaving their teams idle longer, and most of them have been busy a-field this week and will so continue for five or six weeks to come if the weather does not protract their plowing and grain seeding labors longer.

LOS ANGELES—*Star*, Jan. 18: **GRAPE VINES GIVE WAY TO FRUIT TREES**.—Mr. Lawlor has, during the last year, planted on his place, near Jefferson street, sixteen hundred lime and two hundred walnut, making in all two thousand fruit trees. He intends this grove to be the finest in the State. Twelve thousand grape vines were uprooted and thrown away in order to give more scope for the growth of the fruit trees.

MONTEREY—*S. B. Press*, Jan. 13: No frost has come heavy enough to kill tomatoes and watermelon vines in our kitchen gardens. The tomatoes are ripening, and the watermelons seemed to have paused to look around and see what all this rain means, a novelty quite unknown to average watermelons. As they lie in sight of our thermometer, they may be waiting for the mercury to rise so that they can ripen with some degree of comfort.

NEVADA—*Republican*, Jan. 13: **PLANTING VALUABLE TREES**.—A number of citizens of Grass Valley are planting chestnut, black walnut, butternut, and other valuable trees not indigenous to this State. A species of the black walnut grows in California, but it bears a smaller and less valuable fruit than the Northern and Middle Atlantic States. We presume the hickory walnut tree would grow here as well as in the Eastern States if an effort was made to introduce it. For timber purposes the hickory would be the most valuable tree

that could be grown on the Pacific slope. The planting of such trees as we have mentioned is worthy of the serious attention of every man who has any spare land where such trees will grow, and they will grow wherever there is soil, and with no more care than is required for our common fruit trees. Let no man be deterred from planting such trees for fear he may not live to pluck the fruit from the same; that principle would be too selfish. Plant trees, and be a public benefactor after you have bidden adieu to mundane things.

ANGORA GOATS.—Of 160 Angora goats belonging to E. O. Tompkins, at Bear Valley, only about twenty have died during the past eighteen months, and eight of these died from rattlesnake bites. Mr. Tompkins has found a sure remedy for these snake bites in ammonia.

SAN BERNARDINO—*Gazette*, Jan. 13: There are twenty-nine fine flowing artesian wells within the city limits of San Bernardino, and the well-borers are kept constantly busy all the time boring new ones.

The oldest citizens tell us that this is one of the finest seasons they have ever known in California. The prospects of fine crops the coming year were never better than at present.

SAN DIEGO—*Union*, Jan. 13: **WINTER IN SAN DIEGO**.—The mean of the thermometer during the month of December was 56.54°. Yesterday the thermometer stood during the day at 59°. Our gardens are full of flowers; camellias bloom in the open air; the hills and slopes are covered with green grass, and butterflies are flitting through the air. From the gardens round the bay delicious, ripe strawberries are brought to the city; tomatoes are found in our vegetable shops, in plenty; crisp, juicy radishes may be had at the breakfast table every morning. This is winter in San Diego.

FARMING ON THE CAJON.—While the grass is not so high as in town, the rains have been abundant and the moisture has penetrated the soil to the depth of from 8 to 10 inches. The whole valley presents a scene of activity that has never before been witnessed there. Plowing is going forward on all sides, and a greater breadth of land will be seeded than had previously been anticipated.

There is also considerable activity in farming in the Chollas Valley. All the small farms are being plowed and planted in grain. The rains have wet down the ground to the depth of 10 or 12 inches. There are at least 5,000 acres of good farming land hereabout, and a large portion of it will be farmed this season.

The country looks exceedingly well between the city and the Cajon Valley. Everything bears an aspect of freshness. The grass is abundant all over the mesa.

SAN JOAQUIN.—*Republican*, Jan. 17: **CROP PROSPECT**.—This will be a prosperous year in California. San Joaquin valley will yield an ample harvest; such a harvest as never before rewarded the husbandman. This valley will produce more wheat this, than for the past three years. Every possible acre will be seeded, as facilities for procuring grain for seed are such that, we believe, few who desire will fail to obtain a supply sufficient to sow all the ground they are able to prepare.

The farmers on the west side of the San Joaquin river are moving in the matter of protecting their grain-fields from the ravages of fire the coming summer. The plan is to organize a brigade of mounted men, whose duty it shall be, day and night, to patrol the lines of railroads and all wagon roads leading through the valley. In this way fire can be discovered immediately, and promptly extinguished before it has time to spread. The services of this brigade will only be required about one month, going upon duty when the growing grain is dry enough to burn. The plan is to tax all the farmers for the payment of these men which, it is claimed, will be cheaper and much better than to insure the growing crops.

A plan is on foot to make Moore's Landing, on the San Joaquin river, a point of some importance the coming summer for the shipment of grain. The farmers talk of clubbing together for the purpose of chartering a steamer and barges to take their grain to San Francisco. Those who are active in the matter assure us that they can lay down their crop in San Francisco for fifty cents per ton, exclusive of hauling to the landing. If this estimate is correct, the farmers will save many thousand dollars that they would otherwise be obliged to expend for freight.

TULARE—*Delta*, Jan. 17: **NEW LAND SEEDED**.—Mr. Smith, who lives twenty-five miles from here on the Squaw Valley road, tells us that in traveling about the county this week he has seen at least two

thousand acres of new land that has been broken, and about one-half of it seeded, since the rains. He reports that Mr. Myers, on Lewis Creek, has a field of four hundred acres of grain up about two inches. If the rain holds off a few days longer, many thousands of acres of new land will be put under cultivation. We have no doubt that the grain yield of this valley this year will astonish even those who are the most enthusiastic about its resources.

Before another dry season our valley will be mainly so well irrigated as to be independent of dry seasons. More substantial improvements will henceforth be made. There will hereafter be very few thinking of giving up their lands to try some other place. The railroad is coming. Already we hear the rumble of its heavy wheels. Its influence is felt on real estate, and we see it in the influx of population and capital.

FISHY.—We are informed that vast numbers of suckers are to be found in all of the streams leading out of Tulare lake, which have been raised by the rains of the season. They are so thick that horses fording the creeks are liable to become frightened and unmanageable by their splashing and floundering. Farmers go to the deeper places and pitch them up on to the banks for their hogs. A fork will bring up from one to three every time. They will average about two pounds each.

OUR GRAIN FIELDS.—All agree that there is every likelihood of the present being the most favorable season that has ever been known in Tulare county. Immense fields of grain are already put in, and we are credibly informed that fully three, and probably four times as much land will be seeded this year as was ever done before. Mr. Bacou, on the Cottonwood, has finished sowing fourteen hundred acres, and Mr. J. D. Keener has already sowed about one thousand acres in the same locality. Five or six men can be named who have put in an aggregate of ten thousand acres.

YOLO—*Mail*, Jan. 18th: **SHADE TREES**. This year is so favorable for the successful planting of shade trees along the public highways that we think it opportune now to call the attention of our farmers and others to the fact that a law is in force which gives for every tree planted and taken care of four years, one dollar for each tree—warrants for the payment of said money will be drawn on the road fund. The Board of supervisors accepted the provisions of the law two years ago, and those who desire to so beautify the highways through their possessions can plant the trees, and the favorable season will do the balance of the work.

THE ALFALFA FEVER.—From present appearances, and the trade which seems now to be all the go in alfalfa, it looks very much as though it was going to be the leading production, except wheat, in the State. We are informed by Mr. N. Wyck-off that he has shipped several tons of seed to Tulare, Kern, and others of the lower counties, and that he has letters of inquiry from many parties throughout this State and Oregon in regard to its usefulness and the probabilities of its being profitable in sections where as yet, it has not been tried. It is undoubtedly a valuable production for this State, and those who have it know it cannot be dispensed with during the long dry seasons as sure feed for cattle.

COLORADO.

Signal, Jan. 13: **FARMING PROSPECTS.—No year has ever begun with better prospects for farming or stock raising. Enough rain has fallen here to insure an abundant crop of grain, and better pasturage than for several seasons. The winter, notwithstanding the shortness of pasturage, owing to two years of unprecedented drouth, has been most favorable to stock, having been continuously warm in sunshine and rain. Ten acres of wheat will be sown to every one of any former year; and nearly a like proportion of barley, corn, flax and other products of the country. All seem determined to make up for lost time, and no part of the State, in proportion to its population, will turn out so large an amount of produce, nor so varied a crop, as "Ventura" county in 1872.**

GREELEY Tribune, Jan. 17: Col. Archer, of Denver, informs us that he proposes to organize a Beet Sugar Company. Several farmers have agreed to invest \$5,000 each. Mr. Archer built the gas and water-works in Denver, and whatever he undertakes he is sure to accomplish. He is also engaged in farming, and we learn that he operates by best methods.

A company is nearly formed for cutting and floating wood from the mountains down to our town. The forests commence about

5 miles above the cañon and 40 from Greeley. The amount of timber close to the river is immense. The distance to be run by the river is nearly 100 miles and the drive can be made in less than a week. Shares have been subscribed to the amount of \$2,500.

Several gentlemen interested in agriculture and stock-raising, met at Denver on Monday of last week, when a committee was appointed to draft the laws for a Territorial Stock Growers' Association. The meeting was largely attended, and its proceedings will no doubt have a good effect on the interests represented, as provision was made for the introduction of such legislation as would end the vexations now experienced, in some portions of our Territory, by farmers and stock-growers.

OREGON.

Oregonian, Jan. 6: The year 1871, though not witnessing many new enterprises of a manufacturing character put into operation, still has seen several places in a fair way for being put into successful operation during this year. Foremost among them, we will mention the Turbine wheel manufactory, under construction at Salem by Mr. Myers. The cost, when erected and placed in working order, will not fall much, if any, short of \$100,000. He proposes manufacturing all kinds of agricultural implements that will give a profit.

Another lined oil and lard oil works have been erected on a large scale at Albany. The wagon manufactory at Salem has been re-erected during the past year. A proposition is on foot for erecting during the coming year two or three different kinds of manufactories on a large scale, only one of which—that for making furniture—we are at liberty to make public. The manufacture of stoves by the Oregon Iron Works is proving a success, and all the stoves turned out by them have given entire satisfaction.

They intend making this branch of their business a specialty, as they have en route all the latest and best improved patterns. The number of stoves, since they commenced making them, four months ago, has averaged nine per day. The number expected to be cast this year is placed quite large. The boot and shoe factory in this city is turning out a superior article, which, so far as we are able to judge, gives entire satisfaction.

The rapidity with which the railroad system of Oregon is assuming form, and the early completion of the North Pacific Railroad, which will make Portland one, if not the principal connecting point, an established fact, has drawn to Oregon a large number of immigrants who have settled in the interior, which, together with the Oregon and California Railroad bringing towards the close of 1871, new points to be supplied, which have heretofore drawn their supplies from San Francisco, have increased the volume of business for the year 1871 over 1870 at least 40 per cent.

UTAH.

News, Jan. 11: **HIDES**.—The produce of hides in this Territory is considerable, and perhaps could be made materially greater if more care were expended upon properly preparing the hides for the market. A gentleman connected with the business handed us the following upon the subject which is applicable anywhere.

DIRECTIONS FOR SKINNING AND CURING HIDES.—*Skinning*.—Avoid as much as possible cutting or scoring the hide. Skin the beef low in the cheeks and legs, leaving the hides as large as possible. Take out the tail bone, and if the hides are to be dried, cut out the ears.

To Salt Cure Hides.—Spread the hide on the floor, hairy side down, and the fleshy side cover with plenty of salt. The next hide should be spread on this, hairy side down and sprinkle the fleshy side with plenty of salt, and so on until ready to ship. About six days under this process will cure a hide.

When ready to ship, shake out the salt for future use, sprinkle lightly with fresh salt. Bundle and tie.

To Dry Hides Properly.—The cheek and leg skins should be skived so as to keep them from curling up and becoming wormy.

Hang the hide from head to tail over a straight edge, an inch or two inches thick, hairy side in. Be sure to hang the hides under a covered shed, so that the sun will not strike on them. A burnt hide is worthless except for glue.

FINE YIELD.—Two English walnut trees back of our office yielded over 300 pounds of clean walnuts, worth fifty dollars.

THE PACIFIC RURAL PRESS is one of the most magnificent Agricultural papers published in America.

Artesian Wells of San Jose.

EDITORS PRESS:—It is to be regretted that the artesian well system, or rather the system of subterranean lakes of our valleys has not attracted more attention from scientific men. A mistaken notion widely prevails among agriculturists as to the effects of artesian wells upon the surface soils. Many contend that frequent borings have a tendency to dry up the land everywhere, except in the immediate vicinity of the wells. That this idea is erroneous will be readily seen upon a fair statement of the facts.

Taking this valley as a criterion, we have indubitable proof that the water supply is in subterranean lakes, or basins, hermetically roofed over with a lid of hard pan, so compact and homogenous that even water cannot penetrate it from above or below. This underground basin has a sort of corrugated conformation—or, more plainly, its bed is full of solid ridges and hillocks which cause the water to remain in beds and channels at various depths from the surface. This accounts for the remarkable difference in the depths at which water is reached in borings in the vicinity of each other. Almost anywhere on the eastern and northeastern side of this city, water can be made to flow abundantly by boring from 45 to 60 feet, while in the heart of the town the same result cannot be effected without penetrating from 250 to 500 feet deep.

The reason is obvious. The water lies in independent channels between the ridges and hillocks of impenetrable hard-pan. If this be true, there is little danger of the flow of water from the wells in our part of the valley depleting the supply of those in another locality. In penetrating to this hidden reservoir, the anger almost invariably passes through the ordinary alluvial sub-deposits of soil, gravel, sand and boulders, until it reaches the ever-present stratum of tough clay, or "hard-pan." If the well borer has been so fortunate as to escape a ridge or hillock, the moment he perforates the clay stratum of gravel, old logs and other pluvial preserves, the water will instantly rise—sometimes with incredible force.

Now, in this operation three or four points are quite apparent. In the first place, the different depths at which the water is reached, indicates that each channel or water bed is separate and distinct from its neighbors.

Secondly. The water beds, no matter how great their distance from the surface, invariably contain drift-wood, and even large logs in a perfect state of preservation, which proves that they have, since their deposition, been excluded from atmospheric action.

Thirdly. The supply of water is always obtained in every locality, the more pierce through the air-tight lid of hard-pan, thus proving that the entire system of water channels, or water beds are hermetically sealed under a common covering of tough clay.

If it be true that this universal clay stratum is air-tight and water-proof, how in the name of good sense can tapping it and letting the pent-up water flow to the surface, cause the land to become dry in the vicinity? If the subterranean beds and channels are distinctive and independent of each other, as they doubtless are, how can boring wells on one side of the valley effect those on the other side? The idea is absurd and the sooner we can get to the surface all the water we can from below, the better it will be for the land and the people.

B. F. S.

San Jose, Jan. 20th, 1872.

THE work on the artesian well at the Lafayette hotel, Los Angeles, has been suspended. The water is so strongly impregnated with petroleum as to be valueless for drinking or cooking.

MONTANA contains, according to the United Land Commissioner's report, 23,000,000 acres of agricultural lands, 12,000,000 of timber lands, and 69,000,000 of grazing lands.

The Lightning Rod Capitol.

Since the St. Louis Fair, held in October 1871, has taken such a conspicuous place among such exhibitions, an illustration of some of its peculiar displays will be of interest. A number of the exhibitors, in a healthy competition, spent large sums of money in placing their articles as conspicuously before the public as possible; but perhaps the most extensive and liberal preparations were made by Messrs. Cole Bros., proprietors of the Franklin Lightning Rod Works, 723 South Seventh St., St. Louis. This enterprising firm, desiring to show their work to the best advantage, conceived the idea of hitting upon a popular question of the day, and constructed a miniature representation of the United States Cap-



"THE LIGHTNING ROD CAPITOL."

itol, built wholly of lightning rods, and inscribed "The Capitol removed to St. Louis."

The hit was a happy one, and the unique structure was surrounded by thousands of spectators every day of the Fair. The building, of which our cut is a faithful representation, was 45x22 and was surmounted by a dome 45 feet high, the whole composed of lightning rods of various sizes and colors, ingeniously arranged and combined as shown. More than 60,000 feet of lightning rods entered into its construction, jet black iron, bright copper, and white rods, being harmoniously blended, to form the walls, while a gorgeous display of glittering stars, gilded balls and silvered tops, ornamented its front and dome. The total value of materials used was nearly \$10,000, and when the sun shone on this glittering mass, bristling with points and other ornaments, the effect was dazzlingly beautiful and challenged universal admiration.

GREAT BEE FIGHT.—The Jackson (Tenn.) *Whig and Tribune* of a late date, relates the following interesting account of the resentment and courage of the honey bee. Capt. Brown, of this city, recently robbed three hives, and Dr. West, a neighbor, robbed four. The bees, thus deprived of the fruits of their labor, became furious; and uniting, making an army of seven hives, they invaded the premises of Mr. Horace Bledsoe, and made a fierce attack on five of his hives. Bledsoe's bees were taken by surprise, and although outnumbered, fought for their homes with desperation. The battle lasted several hours, and four of Bledsoe's hives were literally destroyed. The invaders were finally repulsed, after being almost annihilated. The ground for yards around was black with dead bees. Mr. Bledsoe, although a serious loser, buried the dead warriors with the honors of war. Few of the in-

vaders survived the battle, and from out of five of the defending hives, four were destroyed. It was the bloodiest bee battle on record, and deserves to be handed down to posterity.

Value of Straw for Fodder.

Every winter like the present, with its cold and drenching rainstorms, and with little or no provision for feeding the great surplus of the California stock-raiser, the value of straw as a winter feeding for such stock, is strikingly apparent. There are large numbers of stock-growers in California that would now be only too glad to turn their starving and dying herds upon the waste straw of the grain-grower. In the vicinity of cities the straw is now nearly all saved, and pays a profit of handling; but there are those who, further re-

Artesian Wells.

Important Results Obtained in Los Angeles Co.

The remarkable success attending the efforts of artesian well prospectors, in the vicinity of Santa Ana, is really astonishing. Fine flowing wells have been "struck" in all portions of this county, but an unusual number of them seem to have been especially successfully bored in and around Santa Ana. The low depth at which these wells are discovered is a matter of surprise. One would imagine there must be a sheet of water covering an area of many miles, a few feet under the surface; at all events the indications point that way, and strengthens the supposition, as six wells have been struck during the last year, the deepest of which is the San Joaquin well, which did not answer to the "call of the augur" until a depth of one hundred and forty feet was reached. Most all of the other five wells commenced to flow at a much shorter depth than the San Joaquin well. A fine flow of water was obtained by Mr. McCullough on his place last summer, at the exceedingly shallow depth of twenty-nine feet; another shallow well about a half mile from this one, was struck last spring by Mr. McFadden, at the low distance of thirty-nine feet beneath the surface. So confident was Mr. McFadden of securing artesian water that he did not go to the expense of buying any kind of well-boring material, but constructed a simple boring instrument, after his own notion, which was anything but artistic. He depended principally on luck, and the irrepressible presentiment that an entire sea of fresh water hid a few feet under the ground in his vicinity.

This well throws a constant stream of water, twenty-one inches in circumference, to an elevation eleven feet above the ground. The water is always cold, and as pure as crystal. Two and a half miles from this well is another that throws a column of water several feet high. This one was struck at the distance of ninety-one and a half feet, on Welche's ranch. Another well, from which a fine flow of water was obtained, was opened with the common

est instruments, on Mr. Layman's place, and water obtained at a distance of twenty-seven feet. Mr. Weigan entered into the well-boring mania with considerable enthusiasm, anticipating that he would strike water at a very short distance from the top of the earth; but unfortunately he did not touch the spontaneous fountain until the earth had been penetrated one hundred and thirty-five feet. He has all the water he wants, and some to spare in case of drouth. Thus it will be seen that, within a radius of four miles, six of Nature's perpetual pumps are in operation, throwing up and distributing at least one million gallons of water per day.

The earth is bound to have a certain quantity of water that can either be utilized or saved for future use, by catching the water in a reservoir or plugging up the artesian pipe and stopping the flow.

There are about one hundred artesian wells throughout the county. Probably half of them are in good running order. The business made in this line as an assistance to agriculture in this county is really wonderful. Three years and a half ago there was not an artesian well in the lower country, and to-day we have in this county alone, enough of them to redeem the country from drouth, should that plague visit us again.—*Los Angeles Star*.

LOW BAROMETER IN POLAR REGIONS AND IN CYCLONES.—Observations show that there is a marked depression of the barometer in the polar regions and in the central part of cyclones; but no very satisfactory explanation has as yet been given of the cause of this phenomenon. Reliable observations show that there is a depression of more than one inch below the average at the equator, in that portion of the Antarctic region which has been visited by observers, and about half as much in the Arctic region. It is also known that during the continuance of a cyclone, the barometer stands from one to two inches lower in the central portion of the same, than when exposed in the exterior part.

He who cannot see well should go softly.

Learning makes life sweet.

USEFUL INFORMATION.

Sardines, Where They Come From and How Preserved.

There are few delicacies so well known and so highly esteemed as the sardine. The delicious flavor of the fish when the tin is first opened, and the sweetness of the oil (always supposing a good brand,) print their charms upon the memory. It will be an welcome news, however, to many to be told that anything good in this way is exceedingly scarce this season. Unfortunately, it was the same last year. Then the destroying demon of war took away the fishermen from the villages, and, added to this, the fish were scarce, so that more were contracted for than could be delivered. This year it is worse. Few fish of any size have been caught (except some very large,) least of all those of the finest quality. The consequence is, the French manufacturers are again unable to carry out their contracts.

The fishery, says the *London Grocer*, is carried on generally from July to November, all along the west coast of France. Two of the largest stations are at Donarnez and Concarneau. Fleets of boats go out some few miles and spread out their nets, by the side of which some cod roe is thrown to attract the fish. The nets are weighed on one end and have corks attached to the other so that they assume a vertical position—two nets being placed close to each other, that the fish trying to escape may be caught in the meshes. Brought to land, they are immediately offered for sale, as, if staler by a few hours, they become seriously deteriorated in value, no first-class manufacturer caring to buy such. They are sold by the thousand. The crier employs large numbers of women, who cut off the heads of the fish, wash, and salt them. The fish are then dipped into boiling oil for a few minutes, arranged in various sized boxes, filled up with finest olive oil, soldered down, and then placed in boiling water for some time. Women burnish the tins; the labels are put on, or sometimes enameled on the tins, which are afterwards packed in wooden cases, generally containing 100 tins, and then are ready for export.

It does not always seem to be remembered that the longer the tin is kept unopened the more mellow do the fish become; and, if properly prepared, age improves them as it does good wine. But if they are too salt at first, age does not improve them—they always remain tough. The size of the tins are known as half and quarter tins. There are two half tins, one weighing eighteen ounces and the other sixteen ounces gross. The quarter tin usually weighs about seven ounces, but there is a larger quarter tin sometimes imported. Whole tins, and even larger ones still, are used in France, but seldom seen here.

As is well known, the sardine trade is an important branch of industry, very large quantities being consumed in France; and the exportation to England and America is truly wonderful.—*Scientific American*.

Progress and Popular Science.

M. Sogg, of Neuchatel, writes to the Editor of *Les Mondes* as follows: "Since the world is inclined to ridicule your attempt to popularize science, permit me to ask what is the science which loses itself in the clouds of thought without a desire to come down to the practical, other than an error, the glory of standing by the side of those other honors which elevate the individual and debase the nation? What would astronomy be if it did not serve to measure time and to guide us on our way upon the land and sea? To separate pure science from applied science, is to condemn each to sterility; they can no more exist alone than our heads can exist without our arms and legs.

"Thenard would be forgotten if he had not found the cobalt blue which bears his name; it is alkimetry and alcohometry which have rendered popular the name of Gay-Lussac, and, in spite of all his admirable works, the name of Chaptal would be forgotten if he had not connected it advantageously with the manufacture of beet-root sugar.

"Consider how the intelligence of our great men is developed and you will find always that they step upon the scientific stage with works as brilliant as they are useless to human society; later on and gradually, experience, the daughter of age, teaches them to devote themselves to practical application, and they are more pleased with and more proud of having perfected an industrial process, found the formula of a fertilizer, or discovered a

new ailment, than if they had devised one of those brilliant theories which flash across the scientific heaven like falling stars, in the space of the firmament, and leave no trace behind."

Glycerine Composition for Leather.

As is well known, glycerine has found extensive application in tanning, as it has been discovered that it adds materially to the elasticity and strength of the leather. Especially has it been found of great value in protecting leather bands of machinery from cracking and drying. The partially tanned leather is immersed for considerable time in a bath of glycerine, by which the pores are filled and such an elasticity and softness is imparted that objects manufactured from it are less liable to break.

In order to prepare a neutral gutta-percha composition with glycerine take 3 to 4 pounds lamp black, $\frac{1}{2}$ pound burnt bones (burnt ivory), cover up in a suitable vessel with 5 pounds glycerine and 5 pounds common syrup, and stir well until the whole is intimately mixed and free from lumps. Four or five ounces of gutta-percha, finely cut, are to be put into a kettle, and after melting must be mixed with 20 ounces of sweet oil and dissolved, and two ounces of stearine added. While still warm the gutta-percha solution must be incorporated with the syrup and lamp black and after this is done, ten ounces of Seuegal gum dissolved in $1\frac{1}{2}$ pounds of water is also added. In order to impart an agreeable odor to the mass a small quantity of rosemary or lavender oil may be introduced.

In using, the glycerine gutta-percha paste must be diluted with three or four parts of water. It gives a fine lustre and, as it contains no acid, it does not injure the leather, but makes it soft and elastic and adds very much to its durability.—*Journal of Applied Chemistry*.

Lint.

Next to cotton, the vegetable fibre most extensively used for textile fabrics is flax, the Latin name of which is *linum*,—hence come the names of linen and lint. The fibres of cotton and flax, viewed under a microscope, will be found to be different; the fibre of cotton is angular, or bladed, while that of flax (linen) is perfectly round and smooth. It is this difference in their natural formation that constitute the superiority of linen over cotton as a material for dressing wounds, or as a fabric for clothing the body. Lint is the unweaved fibre of linen. By wear, and much washing, which it necessarily undergoes, linen becomes softer than when new; it undergoes a partial decay, and the much-prized linen eventually becomes "rag." In this state it is fit only to be converted into paper or lint. Lint is, in fact, the woolly fibre of old linen, "thrown" or slightly "felted" together (as manufacturers term it) into the material form so named. The flax plant yields not only linen by means of its fibre, but it also, by expression, gives a valuable oil from its seeds, known in commerce as linseed oil. The residue, after the oil is expressed, is called linseed cake, and excellent food for cattle. Each product of the flax plant, both in peace and in war, has its value either as linen, linseed, or lint.—*Scientific American*.

How to Use the Thermometer.—Signal Officer Singleton, of St. Louis, alluding to some statements respecting discrepancies between government reports of the weather, the state of the thermometer, etc., and those made by private individuals, says: "A thermometer should be placed in an open space, out of the vicinity of high buildings, or any object that impedes the free circulation of air. It should face the north, to be always in the shade, should be twelve inches from every neighboring object, should be about fifteen inches from the ground, and should be protected against its own radiation to the sky, and against the light reflected from neighboring objects, or the ground itself. The thermometer should be read as rapidly as possible, as the heat from the body or the breath influences the instrument. I have taken a thermometer belonging to a gentleman in this city, that read seven degrees above the standard instrument in this office, and after removing the back, which was of metal, painted black and varnished, (with a radiating power of seventy-seven degrees at night), placed it in my instrument shelter, after ascertaining the error, by my standard, (which was but three-tenths degrees, the instrument being an imported article and very fine), I found it to read exactly with the standard. Out of 470 observations at all hours of the day and night it varied but once, and then was but two-tenths degrees.

GOOD HEALTH.

Why do Not Our Teeth Last a Life Time?

That our teeth are made perfect, if the right materials are furnished, there cannot be a doubt. But are the necessary elements furnished to children as they are to the young of other animals? And do we not subject our teeth to deleterious influences from which animals that obey their natural instincts are exempt? The forming young of other animals, while depending on the mother, get lime, and phosphorus, and potash, and silex, and all the other elements of which the teeth are composed, from the blood or milk of the mother, and she gets them from the food which Nature provides containing these elements in their natural proportions.

But where can the child in its forming state get these necessary elements, whose mother lives principally on starch and butter, and sugar, neither of which contains a particle of lime, phosphorus, potash or silex? Nature performs no miracles. She makes teeth as glass is made, by combining the elements which compose them according to her own chemical principles. And this illustration is more forcible, because the composition of the enamel of the teeth and of glass is very nearly identical, both, at least, requiring the combination of silex with some alkaline principal.

If, then, the mother of an unborn or nursing infant lives on white bread and butter, pastry and confectionary which contains no silex, and very little other elements which compose the teeth, nothing short of a miracle can give her a child with good teeth, and especially with teeth enameled. But what article of food will make good teeth? Good milk will make good teeth, for it makes them for calves. Good meat will make good teeth, for it makes them for lions and wolves. Good vegetables and fruit will make good teeth, for they make them for monkeys.

Good corn, oats, barley, wheat, rye, and indeed, everything that grows, will make good teeth, if eaten in their natural state, no element being taken out; for every one of them does make teeth for horses, cows, sheep, or some other animal. But starch, sugar, lard or butter will not make good teeth. You tried them all with your child's first teeth, and failed; and your neighbors have tried them, and the result is that a man or woman at 40 with good, sound teeth is a very rare exception.—*Philosophy of Health*.

Glycerine as Food and Medicine.

Glycerine is one of the most valuable articles our pharmacopoeia can boast of, while as an article of food, it is one of the best and most fattening nutriment. Sweet oil, or olive oil, has for ages been an article of daily diet in Palestine and other old countries, and glycerine is an essence of it. It is a perfectly natural and bland fluid, and the most penetrating, perhaps, in all Nature. Oil itself will penetrate where water will not, and glycerine, which may be considered the ethereal part of oil has this property to a most remarkable degree—it penetrates the solid bone.

A medical journal tells us that if poured into a mixture of blood and matter, such as is expectorated from consumptive lungs, it will get between the globules of each and show them with greater distinctness. Being thus penetrating, it is the very best application for feverish sores, for inflamed or dry surfaces, simply from its quality of penetration and evaporability. If applied with a common brush to the surface of the throat in diphtheria, in a few minutes its permeative quality enables it to sink between the molecules of the false membrane, dissolving and detaching it in a few hours. It is the best application known in case of burns.

Glycerine for Putrid Sore Throat.

Dr. J. D. Palmer, in the *Journal of Pharmacy*, says: I have found this an invaluable remedy in putrid sore throat, as well as in many other affections. Not long since a case occurred in which its healing properties were fully tested. The patient, a little girl, seven years of age, had been suffering several days before I saw her, and the various remedies employed had made no impression on the disease. As it was with great difficulty and pain she swallowed, and her pulse being very weak and quick, it was important that the remedy adopted should possess healing, nourishing, and antiseptic properties; and glycerine possessing these properties, was administered in teaspoonful doses every

six hours. The first dose caused some smarting, the second less, and before giving the third there was obvious improvement. The case was dismissed in three days.

The Unwearied Action of the Heart.

The effect of everything that touches the heart is multiplied by the intensity of the heart's own changes. Hence it is that it is so sensitive, so true and quick an index of the body's state. Hence, also, it is that it never wearies. Let me remind you of the work done by our hearts in a day. A man's total outward work, his whole effect upon the world in twenty-four hours, has been reckoned about 350 foot-tons. That may be taken as a good "hard day's work." During the same time the heart has been working at the rate of 120 foot-tons. That is to say, if all the pulses of a day and night could be concentrated and welded into one great throb, that throb would be enough to throw a ton of iron 120 feet into the air. And yet the heart is never weary. Many of us are tired after but feeble labors; few of us can hold a poker out at arm's length without, after a few minutes, dropping it. But a healthy heart, and many an unsound heart, too—though sometimes you can tell in the evening, by its stroke, that it has been thrown off its balance by the turmoils and worries of life—goes on beating through the night when we are asleep, and when we wake in the morning, we find it at work, fresh as if it had only just begun to beat. It does this because upon each stroke of work there follows a period, a brief but a real period of rest; because the next stroke which comes is but the natural sequence of that rest, and made to match it; because, in fact, each beat is, in force, in scope, in character, in everything, the simple expression of the heart's own energy and state.—*Appleton's Journal*.

THROAT AND LUNG DISEASES.—Most of the throat and lung diseases, which indirectly lead to consumption, are occasioned by sheer carelessness. A delicate woman often sits for two or three hours in a crowded theater or church, breathing an atmosphere tainted by the exhalations from the lungs of hundreds of other people, her system is exhausted, her skin is excited by unwonted action, and when she leaves the building and goes out into the cold air her blood is suddenly driven to the interior of the body, and then ensues a more or less permanent congestion or inflammation of some of the internal organs—usually the air tubes in or leading to the lungs. This process being repeated many times, a chronic bronchitis is finally established in persons otherwise healthy, and life is ever after rendered miserable by this periodical overheating and sudden chilling of the body, even if the more dangerous malady, consumption does not interfere, and put the abused body into the grave.

NEW USE FOR ELECTRICITY.—Electricity has achieved a new triumph. Already employed to restore vigor and nimbleness to the gouty limbs of decrepit *bons vivants*, the recent discoveries of Dr. Bernier, a French physician, show electricity to be an efficient remedy for the evil effects of excessive drinking on the human nose. The doctor maintains that, by the application of an electric current to noses even of the most Bacchanalian hue, the flesh may be made "to come again as the flesh of a little child;" and he supports his assertion by a case performed on a female patient of his own, a woman of high rank.

FEMALE PHYSICIANS.—The prospects of medical education for women are brightening. The medical faculty of Moscow, Russia, it is stated, have not only decided that the privilege of acquiring a thorough medical knowledge would be of utility to women, but have "resolved to admit them to the educational courses and lectures of the University, and to the privilege of following all the labors of the Medico-Chirurgical Academy."

TO STOP THE BLEEDING FROM LEECHES. Make a ball of cotton about the size of a pea; put this pellet of cotton or lint upon the wound; press it down firmly; keep up the pressure for a quarter of an hour. Remove the finger cautiously, taking care to let the pellet remain.

TURPENTINE FOR HEADACHE.—Dr. Bebbie, of the *Edinburgh Medical Journal*, advocates the use of turpentine for the headache to which nervous women are subject.

TO PREVENT DISCOLORATION FROM BRUISES.—Apply repeatedly cloths wrung out of hot water, or the tincture of arnica.



PUBLISHED BY

DEWEY & CO.

A. T. DEWEY, W. B. EWED, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWED, A. M.
ASSOCIATE EDITOR.....J. N. HOAG, (Sacramento.)OFFICE, No. 338 Montgomery street, S. E. corner of
California street, where friends and patrons are invited
to our SCIENTIFIC PRESS, Patent Agency, Engraving and
Printing establishment.

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SAN FRANCISCO:

Saturday, Jan. 27, 1872.

Our Weekly Crop.

The possession of a pleasant and comfortable home ought to be a prime object with every young man, and to that end our artist is from time to time devising and presenting to the readers of the RURAL PRESS, various plans to suit the varied circumstances and tastes of different individuals. He has to-day presented us with a plan for "A Convenient Farm House and Barn" combined, which, for economy, good taste, and convenience, has seldom been equalled. Our gardener is also near by to give us some valuable hints on the the best kind of "Raisin Grapes;" the "Benefits of Overflows;" "Evergreen Tree Culture," and "Home Products." The information on these various points will be found very valuable.

In the way of mechanical progress, we find some valuable information about "Titanic Iron and Steel;" the construction of "Fire-Proof Buildings;" "A Substitute for the Spectroscope," and something about the "Recent Progress in Chemistry." Passing on to the sheep-fold, we learn some interesting facts about "The Fluke-rot in Sheep," with which our Oregon friends are more particularly annoyed, but which, with the present wet season may make its more general appearance in California. Our "Agricultural Notes" are full and important, and should always meet with attention.

The subject of a water supply from the lower strata beneath the surface of our plains is attracting increased attention; and "Artesian Wells in Los Angeles and Santa Clara Counties," form important subjects for our consideration to-day. Their principal characteristics are briefly considered in the latter instance. We have also some valuable hints on the "Value of Straw for Fodder."

Our architect has erected a somewhat unique structure this week, which he calls "The Lightning Rod Palace," from the material out of which it is constructed. Although lightning rods are hardly needed in California, still it is interesting to most of our readers to know what is going on elsewhere.

In the way of "Useful Information" we are told all about "Sardines Where they Come from and How Preserved;" the "Progress of Popular Science," etc. The Doctor tells us "Why our teeth do not last for a life time," and something about "The Unwearied Action of the Heart." We also have something just here about "Forest Tree Culture;" "Early Fruitfulness in trees;" "Irrigation vs. Swamp Lands;" "Tulare Lake and Valley;" etc. Mr. Rickey has also favored us with a fine illustration and full description of his new and important invention "An Improved Bung and Bung Extractor," which will be found very important to all who make much use of barrels for wine, cider or other liquids. After examining which, we pay a brief visit to the Sacramento Farmers' Club, which we find engaged in an interesting discussion on Senator Betge's Forester Bill, Fruit Culture, etc.

We close the week's labors with our accustomed visit to the Home Circle, where we are treated to "A few Notes from Mrs. Adam's Lecture on the Holy Land;" learn "The Art of Living Together" in Harmony; read a "Chapter on Fashion;" gain admission to "A Japanese Boudoir;" and then pass "Down the Slope," to where the Young folks are listening to an interesting history of "Jack Horner, Esq." From thence we pass to a brief consideration of the Economy of the household, in the matter of the use of various kinds of food, etc., and thus reach the end of another week, with the full assurance that the last seven days have not been spent without learning something new that will be useful to us in the weeks to come.

Forest Tree Culture.

The subject of commencing the cultivation of forests in this State seems now to be attracting some considerable attention in different portions of the State. The Farmers' Club of Sacramento, composed of an intelligent class of farmers and horticulturists, has had the subject under consideration at two of their meetings, and have appointed a committee of five of their number to prepare a bill to be presented to the Legislature, the object of which will be the encouragement of this important branch of rural industry by an appropriation of money in the shape of premiums or by a remission of taxes on land devoted to forest culture.

The Bay District Horticultural Society have also appointed a committee for a like purpose—and we understand the latter have already visited Sacramento and had a conference with the Senate Committee on Agriculture, whom they find all favorable to the cause.

The State Board of Agriculture have urged this matter in their reports to the Legislature at the past two or three sessions, and it is understood will renew the subject in their report this session. They have shown by a careful investigation and estimate that although we have been using timber on this coast to any extent only about twenty years, at least one-third of all the accessible timber of value is already destroyed or consumed. If such be the fact it may well be asked from whence are we to obtain the timber which we shall need for the construction of railroads, bridges, wharves, bulkheads, factories, warehouses, and public and private dwellings, for the twenty years to come. We have but just entered upon an era of active public improvements, and in all probability will want many times as much timber for these purposes in the succeeding twenty years as we have used in the past twenty years.

In view of these facts we would suggest that it is one of the most important subjects that can engage the attention of our Legislature to prevent the unnecessary destruction of the forests yet standing in our State.

It seems to be one of the worst features in the settlement of new countries by the American people to indulge in a useless and reckless destruction of the native forests. In our own State there has been no exception to this general rule. This habit has been indulged in here to an unprecedented extent. Thousands and thousands of the noblest and most valuable of our forest trees in timbered districts of the Sierra Nevada and Coast Range have been destroyed without object or purpose and with no adequate benefit to the destroyer or to anyone else. We are apt to think that an article that is plenty immediately about us is plenty everywhere, and if abundant now, it will always be so—at least we act this way. Then in connection with the encouragement of artificial forest culture we would urge the importance of effective measures to prevent the unnecessary destruction of the native forests.

Hard Timber Culture.

From the fact that but little hard timber fit for manufacturing purposes was found growing naturally in this State, the impression became general that the climate was unfavorable to the growth of such timber here, or that some other natural cause existed to prevent the successful cultivation of such timber in the State. Recent experiments made by competent mechanics with good eastern varieties of hard timber cultivated in different portions of the State, have proved this impression to be entirely erroneous. Many of these kinds, such as the elm, the locust, and the osage orange, are claimed now to be better grown here than elsewhere—better than the same kinds imported.

The above facts have called the attention of the public to this important subject and hence the action of the several societies above named and others, in the premises. Now the question arises as to what is the best manner of affording the encouragement desired, and at the same time preventing any improper expenditure of the public funds or income. Any law to be passed for this purpose should be carefully guarded by proper and carefully considered provisions, and yet should not be so loaded down with useless provisions as to defeat its own objects, as is the law now on the Statute books for the encouragement of planting trees along the highways. We think, too, any law on this subject should be so drawn as to induce the planting and cultivating of forests or small collections of forest trees by the farmers gen-

erally throughout the timberless districts of the State, rather than in very large bodies, in particular localities.

Again, it should not require, as one of the conditions of obtaining any premiums offered or benefits specified, that the party who plants and brings a forest of trees into successful growing, shall of necessity have raised his trees from the seed, for the reason that it is a matter of great difficulty to raise some of our best varieties of timber trees—the pines and redwood for instance—from seed, and if the farmers were required to do this part of the work it would result in many instances in fruitless and discouraging experiments and loss of money and time without any benefit to the experimenters or the State. The farmers or any others who may engage in the cultivation of forests, should be allowed to purchase their trees, when of the proper age for transplanting, from the nurserymen who have the skill and convenience of propagating them. The competition among nurserymen would be a sufficient guarantee against their demanding exorbitant prices.

We notice that Robert Williamson, an extensive nurseryman at Sacramento, stated before the Sacramento Farmers' Club Meeting two weeks ago, that he would contract with any responsible parties to furnish good trees of the sugar pine or redwood varieties, one year old, at \$2 per thousand; and E. F. Aiken stated before the same club that the evergreens of all the different valuable kinds grown in the Eastern States, can be had of Eastern nurserymen at the same price there, and sent here in good order through the post office, postage paid, by the shippers.

State Forester or Forest Commission.

A bill now before the Senate proposes to appoint a State Forester at a large salary, and defines his duties and calls for the large expenditure of money in carrying out the objects of the proposed law. We would look with suspicion upon any proposed law that should provide so large a salary for the performance of the duties prescribed, and would doubt the propriety of entrusting the expenditure of so much money for so important an object of so experimental a character to any one man. We would suggest that a better plan would be for the Legislature to organize and elect a Commission, to be called the Forest Commission, and let this Commission appoint the active man to execute their plans and carry out the objects of the law. Such Commission should embrace the Governor of the State, and say two other practical agriculturists or horticulturists. For instance, such men as John Bidwell, of Butte County, C. F. Reed, President of the State Agricultural Society, Lewelling of Alameda, or any other men of practical experience, whose character would be a guaranty that the money appropriated would be properly and judiciously expended.

Early Fruitfulness in Trees.

Perhaps in no other country in the world do fruit trees attain to fruitfulness as young as in California. It is not unusual to see peach trees in bearing at two years from the seed, and pears and apples at four years. Now though it may seem quite desirable that an orchard should attain to early maturity, in a pecuniary view, yet it is too evident that very many orchards amongst us are now showing the injurious effects of this inclination to early precocity. With peach trees, the first two years should be given entirely to the growth and formation of the trees; the third year they may be permitted to bear a fair amount of fruit, always trimming out the smallest specimens where there is a tendency to overbearing.

It would be better in establishing an apple or pear orchard of standard trees, that not a tree be permitted to produce fruit before the fifth year. This would enable the trees to develop fully their wood, and a desirable form of growth could by that time be secured. Not that all trees should be grown to a certain fixed standard of form, for this would be all wrong; different varieties of pears and apples naturally incline to a certain habit of growth, some being low and wide spreading, others as decidedly upright. But where strong winds from a particular direction prevail, and are likely to give the tree a set in the direction of such winds, a great deal can be done in the first four years by a judicious system of pruning in establishing a balance of growth and top that will be seen ever after contrasting favorably with those with which no such care had been taken.

"FARM HOUSE CHAT," by "Mary Mountain," is in type, but necessarily deferred.

"A. N. M.," of Twin Bridges, Montana—answer will appear next week.

NEW SUBSCRIBER, Corinne, Utah. Inquiry on machinery for water lifting will receive immediate attention.

Irrigated vs. Swamp Lands.

The unusually dry seasons that till the present, have succeeded each other in California for four or five years, and the losses and suffering incident thereto, have turned public attention to the reclamation of swamp and overflowed lands as promising a security against the injury resulting from recurring dry seasons. That the lands of the partially submerged islands of the Sacramento and San Joaquin rivers when effectually reclaimed, will be among the most productive and valuable lands in the State, no one will doubt; nor will any one for a moment suppose that their complete reclamation will not be eventually secured. However, when all this shall have been accomplished and perfect security apparently attained, by the maintenance of annually strengthened levees, still, as with all countries, portions of Holland for instance, where security from overflow consists only in earth banks, a doubt always hangs over the minds of the people so situated as to what the effect of the very next unusually high water will be. Absolute safety is never to their minds a perfectly clear thing, and vigilance and watchfulness are cultivated as cardinal virtues, as security against desolation and ruin from overflowing waters.

But in California there are vast acres of country lying along the base of the lower mountains, that might all be irrigated from reservoirs constructed back among the higher valleys and gorges of the mountains, that, while receiving an abundant supply of waters for irrigation from such reservoirs, could in no possible event be subject to loss from inundation. Perfect, full security would be always present, with an unfailing supply of water and consequent resulting annual crops.

This description of lands is particularly favorable to the small farmer who, if with only limited means, but a variety of products, would in the end well hold his own with many of those whose motto is, "One crop, make or break." It is clearly apparent, too, from the movements of capitalists, that attention is being given to the sources of nearly all our mountain streams, with a view of locating reservoirs for the very purpose we have here suggested.

There are in the Sierras, numerous lakes located in valleys where their outlets are but narrow gorges between mountains, easily closed up to heights that would cause the overflow of hundreds of acres, many feet in depth, which are now of little or no value but for this very purpose, but which can be made of immense value to the farmers situated anywhere below them. Full crops would be annually and certainly secured, with perfect immunity from the breaking of levees and damaging floods.

Tulare Lake and Valley.

Towards the south end of the great San Joaquin Valley, in the midst of what would otherwise be nearly desolate plains, producing only grass, lies Tulare Lake, a shallow body of water; but with a superficial area of nearly a thousand square miles, at seasons of high water, and having such seasons an outlet by Fish river into the San Joaquin river; but during low water, there is no overflow. Its principal tributaries are: Kings river, Four creeks, Tule and Rosa creeks, and the overflow of Kern lake, at seasons of high water.

The surface of Tulare Lake is but three or four feet below the surface of a million of acres of the finest lands in the world surrounding it, capable, if irrigated, of producing abundant crops of fruits or cereals. It is now proposed to raise the waters of the lake a height of ten feet or more, by an embankment completely surrounding it, and then using the water for irrigating the lands around it. It is a project perfectly feasible, for Kings river alone would supply all the water needed for a complete irrigation of the whole valley for scores of miles in any direction, and have a large surplus annually to pour into the lake as a general and never-failing reservoir for seasons of excessive drouth.

As we have remarked, grass alone now grows upon the vast plains surrounding the lake; but owing to the entire absence of water at a distance from the lake, even the dried-up grass of summer is of no use to the stock-grower. But let canals traverse through these now waste places, carrying the waters for irrigation to their remotest limits, and blooming gardens, with orchards and groves of the orange, lemon, and fig trees, with green grass ever verdant will abound everywhere.

Rickey's Improved Bung and Bung Inserter.

A cheap, convenient and perfectly tight bung has long been a necessity, especially for brewers purposes, where they are liable to leak or be blown out if they are not perfectly fitted and secured. Many different kinds of patent bungs have been offered to the public from time to time, but each of them has been thrown to one side after a short trial as defective or wanting in some particular. The illustration presented herewith represents Rickey's Patent Bung and Bung Inserter, the latter being an instrument devised by Mr. Rickey for screwing the bushing into which the bung or plug fits, into the barrel stave. The bung seems to us to be quite complete and we see no reason why it will not eventually take the place in the market of all others. As it is a recent California invention, and enters into the needs of almost every farmer's household, we give the following full description and illustration of the same:

By referring to the cuts, it will be seen that the central figure, *A*, is the metallic ring or bushing, which is provided with internal and external screw-threads in the ordinary manner. This ring is made slightly tapering or conical and the threads narrow at the base and quite sharp, so that when it is screwed into a hole of the proper size it will cut its own threads. This may be done by the use of the bung inserter, shown on the left-hand side. The inserter consists of a metal standard, *E*, in the upper end of which is a hole. The base of this standard is made of the same size as the bung and provided with screw threads as shown. Resting upon this base and encircling the standard, *E*, is a ring, *G*, in the upper face of which and opposite each other, are two oppositely inclined depressions, as shown, and passing through the standard so that its opposite ends will rest in these depressions is a bar, *F*.

To use this inserter the base is screwed into the bushing until the ring, *G*, is brought down against the face of the bush. The standard, *E*, is then turned until the ends of the bar, *F*, rest as far as possible up the incline of the depressions. The base is then screwed down until the ring rests upon the face of the bushing. A proper-sized hole having been first made in the barrel stave by means of a bung borer, the bushing is started into it, when, by placing a rod through the hole in the standard as a lever the bushing can be screwed into the hole in the stave until it is snugly down; and when once it has been thus forced down so as to cut its own thread it cannot be started by ordinary means, and will not leak. After the bushing has been firmly screwed down the inserter can be readily removed by turning the standard, *E*, in a reverse direction which causes the bar, *F*, to move to the lowest part of the depression and relieves the pressure on the screw.

In the ordinary bung the washer is merely placed on the projecting seat on the lower end of the bushing and the bung screwed down upon it, thus leaving it free to be washed out every time the barrel is cleaned, and, if left for any length of time the leather becomes hard and adheres both to the seat in the bushing and to the bung so that it is almost impossible to remove the bung. The one illustrated entirely obviates this difficulty and is also provided with more convenient means for being turned. *B* represents a top view of the bung which is cast with a square socket in its upper face, the sides slightly convexed into which the wrench, *H*, is made to fit.

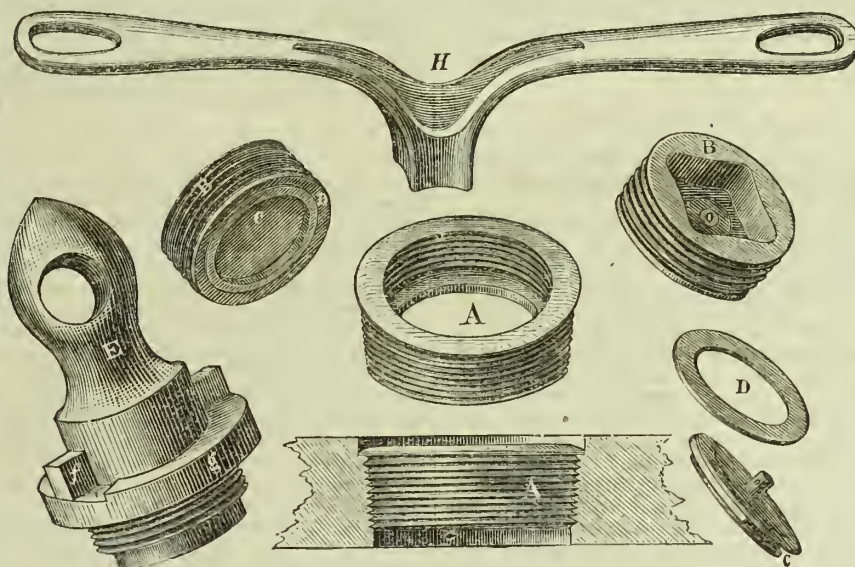
The Fig. marked, *B*, *C*, *D*, shows the bottom of the bung with the disk, *C*, attached by means of the stem as seen at *B*, in the right hand figure. *C* represents a metallic disk having a projecting flange on its under side around which a groove is turned. The washer (either leather or rubber) is stretched over the lower flange so as to fit in the groove, around the outer edge of the disk and thus be permanently fixed upon it. The stem projecting from the upper center of this disk passes up through a hole in the bottom of the bung, *B*, as shown, into the socket where a washer is placed over it and it is headed down. By this means the disk is attached to the bottom of the bung so as to revolve independently.

The object of this is to allow the disk and washer, as soon as the washer has touched the seat in the bushing, to remain stationary until the bung is firmly screwed

down. When the bung has remained this way any length of time and it is desired to remove it, by unscrewing the bung, the disk and washer will be lifted directly upward by the screws and thus avoid the trouble heretofore experienced on account of its adhesion. *D* represents the washer which is to be stretched into the groove in the disk, and can be made either of leather or rubber as desired.

It will be seen that the bushing, *A*, as shown in the lower cut, sets below the face of the stave. This is done without any preparation of the hole, with the use of but a common bung-borer. The threads of the bushing are sharp, and as said before, the bushing is made slightly tapering, so that by the use of the bung inserter and the leverage obtained by using a bar in the hole in the standard of that tool, the bushing can be screwed down as deep as required.

The importance of this ingenious and useful invention is readily seen when the number of barrels and casks that are used on this coast are taken into consideration, and all made of imported material, causing them to be an expensive article. The wear and tear on barrels is principally on the bung stave, which is always the best stave in the barrel, but nevertheless the first to give out, owing to the difficulty in always finding a bung of the proper size or shape, in consequence of the hole becoming elongated. The wood in the hole presents two different surfaces, one with the



RICKEY'S IMPROVED BUNG AND BUNG INSERTER.

grain of the wood at the sides and the other against it. To avoid this it becomes necessary to frequently bore or burn them out, in order to keep them round. Each operation of this sort necessarily enlarges the hole and weakens the stave, and for this reason the bung in a new barrel is left much too small for convenience. Moreover, if by carelessness or an extra quality of timber the hole is not enlarged by this means, it becomes necessary after awhile to take out the head of the cask to get at the corks that have been driven in.

It will be seen from this that it is difficult to keep these holes of uniform size, and consequently a great variety of different sized bungs are required, and these have to be selected with care for each different barrel, consuming considerable time. These bungs are frequently made of old staves and vary in thickness. The thin ones if a good fit, form a shoulder at the bottom, which, when a thicker one is driven in, is broken and the lower end of the wood around the hole becomes a mass of splinters, rendering it difficult to clean, and liable to leak. The object of the above mentioned improvement is, not only to provide a means that will preserve the bung-stave as long as any other stave in the barrel, but to furnish a safe and reliable bung which will be a great saving of labor. This improvement has been thoroughly tested by all the brewers of San Francisco, and has given general satisfaction. One firm alone in this city, Messrs. Spreckels & Co., of the Albany Brewery, have about 1,000 in use, and heartily recommend them. The patent for this device was secured through the SCIENTIFIC PRESS Agency by D. B. Rickey, who may be addressed at No. 111 and 113 Davis street, San Francisco.

THE "OVERLAND" FOR FEBRUARY.—The present number comes to hand full of good things, including a biographical sketch of the life of Joaquin Miller; Wine-making in California; The Commerce of Asia and Oceania; The Palace and Tombs of the Czars, and a characteristic tale entitled "Spades."

Sacramento Farmers' Club.

This club met at their rooms in the Odd Fellows' building on Saturday last at 1 o'clock P. M., a good attendance being present.

The committee appointed at the last meeting to prepare a bill to be presented to the Legislature for the encouragement of forest culture reported that they had had under consideration the bill introduced in the Senate by Senator Betge and the amendments proposed by the Bay District Horticultural Society, and were not able to agree to approve such bill for the reason, among others, that in their opinion the practical operations of this bill would be to create and pay a salaried officer with the money that ought to go directly to the planters of trees and forests to help pay the expense of such planting and cultivating. And that they believe if some small inducement were offered to the farmers generally to plant and cultivate forest trees that the market for such trees thus created would prompt our nurserymen to plant the seed and propagate them in large numbers, and at such reasonable rates that all could afford to buy and cultivate them. And that our nurserymen, being well acquainted with the business, would much more successfully and at much less expense import seed and seedlings of the valuable foreign varieties that it would be advisable to cultivate here, than any person appointed as a

by this bill not one cent would be called for unless success was secured, and every dollar would go to the actual producer and cultivator of the trees.

The club unanimously approved of the bill and it will be presented to the Legislature.

Fruit Culture.

The club then took up the subject of fruit culture, and R. Williamson read a valuable essay, showing that fruit culture, properly conducted, with good varieties, could be made very profitable in this State.

W. M. Haynie said he was somewhat like the man in Sonoma county that gave his experience in the RURAL PRESS. When the boxes and commissions of the middle men were paid, a very small dividend came to him. Still he believed the trouble was in the manner of conducting the business rather than in the business itself. He thought by selecting judiciously the varieties of fruit and preparing them well for the market the business would pay. For instance, the white Smyrna fig could be grown and cured as well here as in Smyrna or any of the countries on the Mediterranean. That they cannot be imported at less than about twenty-eight cents a pound in bulk, and there were millions of dollars worth imported into the United States annually. We should and could supply this market. Fig trees ten years old would give on an average 150 to 200 pounds of dried figs a year, and 200 trees could be easily grown on an acre—making for the acre 30,000 pounds—which at ten cents a pound would give \$3,000. J. R. Johnson said he had been raising figs and marketing them a number of years—he had twenty good trees over ten years old—they average him over \$10 a year per tree. Fig trees must not be crowded; they do better standing large distances apart and the limbs trained horizontally, cutting the top of the tree off. They would run in this way like a grape vine and one tree be made to cover a quarter of an acre. The Italians dry their figs on dry sand; this gives them a uniform heat and they don't require turning, the sand becoming heated. Almonds and other nuts could be made profitable to raise; the market was always good for these kinds of nuts.

Mode of Marketing.

Aiken said that very much depended on the manner of putting fruit into the market. Fruit wanted to look well and inviting, and it would always sell. He had sold peaches in Sacramento for fifteen cents a pound when the same kind were selling at from six to seven cents—the looks sold his and the looks sold the others. The great secret of making fruit pay is, first, grow only the best; second, market at proper time and in good order. It did not pay in any country to cultivate poor kinds of fruit. Poor kinds of grapes would not pay for any purpose. The Feher Szagos grapes had no business in any good vineyard. The White Muscat and Flame Tokay were among the best for shipping, and the latter was a good grape for raisins but the Feher Szagos was good for nothing. Notwithstanding we have a good climate for drying fruit in, the great trouble is the insects. Take your fruit from the scaffold dried in the sun and pack it away and in a short time it will be alive. The way to get rid of the insect eggs is to scald or steam the fruit and kill them, and then place it in the sun again, say for one day, and then pack it, and it will keep well and look and really be much better for scalding. The true way to dry fruit in this State, as well as in all other countries, is in a drying house. Even then the scalding or steaming will do the fruit good and restore the bloom to plums, raisins and other fruit dried with the skin on.

The Best Varieties.

Greenlaw said he was principally engaged in producing apples, and he agreed that the profits were all in having good varieties and marketing them in good condition. He had made raising apples pay to his satisfaction. He had sold \$2,100 worth off of his little orchard of five or six acres, the past season, besides all he had used and given away.

The subject of fruit culture was continued till next meeting, when C. W. Reed will read an essay on the subject.

J. S. Harbison introduced a resolution on the subject of the road laws of the State, recommending the adoption of the laws of Pennsylvania. The resolution was referred to Harbison, Johnson and Aiken to report at next meeting.

Adjourned to meet in one week at the same place at 1 o'clock P. M.

TOTAL RAIN-FALL.—At Green's Ranch, four and a half miles from Davisville, Yolo county, from Nov. 7th to Jan. 10th, was 24.03 inches.



A Few Notes from Mrs. Adam's Lecture.

Mrs. L. I. J. Adams, the Oriental lecturer, in her lecture on the Holy Land, in this city last week, gave some valuable information upon minor items usually ignored by travelers in their histories. Speaking of the plain of Sharon she said: "In December and January the plain of Sharon is like a garden—the cotton and sugarcane is cultivated with success, and small fruits, such as cherries, plums and berries are produced in great quantities."

Tyrian Dye.

"The Tyrian dye, the most beautiful purple ever made, is manufactured from a peculiar shell found upon the sea coast. During great storms the waters wash up vast quantities of shells, and among them is found the variety from which is made the valuable Tyrian dye; the process of manufacture is a guarded secret with the manufacturers of Damascus."

The Husk Tree.

"The husk tree is supposed to be the tree from which the prodigal son received nourishment during his absence from the paternal roof. The husk is very delicious,—its properties are similar to the peach or nectarine, but in form resembles a corn-husk; it is considered a delicacy by the inhabitants of Palestine."

Joseph's Coat of Many Colors.

"The same style of wardrobe is still in vogue in Palestine as was described by the translators of the Bible. Coats or cloaks and tunics, are still made and worn of variegated colors. The cloth is woven in patterns of several colors, usually black and white, but the rulers and High Priests wear robes of more expensive texture and of many colors. Joseph having the favor of his father was permitted to wear more elegant and elaborate clothing. You often hear of A. T. Stewart selling camel's hair shawls at \$5,000, and even \$10,000. The fact is, Mr. Stewart probably never had a real camel's hair shawl for sale; they cost \$5,000 in Damascus, and are a scarcity at that price. Why? Because they are made from the little locks of white wool that grow upon the throat of the white camel. Now the white camel is almost a sacred animal in Palestine on account of its rarity. The shawls are woven thread by thread, by the fingers of the Damascus shawl makers; how many shawls do you imagine they could make in one year? The hair of the Persian goat is the material used in making what Stewart sells as "camel's hair shawls," at \$5,000 each. The shawls of the Persian goat hair are beautiful enough and cost enough for any lady to wear, even though she belong to one of the royal families of Europe. But a real camel's hair shawl in A. T. Stewart's store, would be a veritable curiosity."

The Art of Living Together.

1. If people are to live happily together they must not fancy, because they are thrown together now, that all their lives have been exactly similar up to the present time, that they started exactly alike, and that they are to be for the future exactly of the same mind.

2. Avoid having stock subjects of dispute.

3. Do not hold too much to logic, and suppose that everything is to be settled by sufficient reason.

4. If you would be loved as a companion, avoid unnecessary criticism upon those with whom you live.

5. Let not familiarity swallow up all courtesy.

6. We must not expect more from the society of our friends and companions than it can give; and especially must not expect contrary things.

Elegance by Accident, or a Chapter on Fashion.

The following curious anecdote is told of Lady Wallace, famed in her maiden days as Miss Eglintonne Maxwell, of Monteth, and the sister of the Duchess of Gordon. The young lady's family was about to attend the races at Leith, and the coach was just at the stair-foot, ready to take them away, when it was discovered that Miss Eglintonne was not ready on account of wanting her head-dress, which she was expecting her milliner to appear with every moment. It so happened that, as the milliner was coming along the street with the dress in her hand, she permitted some part of it to catch the knee-buckle of a street porter, by which it was torn, and as she thought, completely spoiled. However, she took it to Miss Eglintonne, and told her the story, with many protestations of regret. The volatile young lady took the dress from her hands, and, running to her glass, proceeded to put it on, torn as it was, only arranging it upon her head so as to conceal the misfortune. She then joined her friends in the carriage, and at Leith, attracting, as usual, much attention, the ladies, instead of ridiculing the awkward appearance of her cap, admired it exceedingly, and came back to Edinburgh, full cry, in the afternoon, to get caps of the same description. Of course, it was soon known that it was the manufacture of the milliner, who forthwith was overwhelmed with orders for similar caps, and, we believe, was obliged to tear them with a nail in her counter, in order to complete their resemblance to the original.

A Japanese Boudoir.

A lady of Mr. James Brooks' party in Japan looked into a Japanese boudoir, and this is her inventory:—

Little or no furniture; no chairs; no bedstead—nothing but mats to sleep on. A toilet-box was on the floor, near the wall—about the only article of furniture in the room. In this box there were five drawers, and two lacquer basins on top. In the top drawer of this box there was a metallic mirror, like our hand-glasses. In the second drawer she kept her powder, paint, wax, brush, tooth-powder and brush. Two little drawers came next: in one she had her false hair, and in the other fancy pins, gilt paper and other fixtures for her hair. In the lower drawer was her pillow, which is placed under the neck when sleeping on the mats, so as to prevent the hair from being rumpled. It is made of wood, and covered with paper on the top. The powder looks like starch, and when they use it they mix a little water with it, and rub it in like paste; and they have two brushes that they use to rub it off with. The paint looks green and turns red when put on the lips and cheeks.

ADAPTATION IN DRESS.—It has often been said that there are no children nowadays. Well, there are no old people either; especially no old women. An elderly lady of our acquaintance, attempting to suit herself with a bonnet at a milliner's, the other day, turned from the silly little things that were offered to her, and asked for something better adapted to her years. "La! ma'am," replied the astonished saleswoman, "there are no such things as old ladies' bonnets now!" And true enough, when one sees every day in the streets the frumpy toys that crown gray heads, the loads of gay ribbons and flowers from under which, with hideous incongruity, peep parchment faces, like skulls at Egyptian feasts, mementos of mortality, he feels that the principle of adaptation in dress is out of date indeed—that fashion and fitness have no longer anything in common. He is in a mood to sympathize in the indignant outburst of Petrarch:

Why this was molded on a porringer;
A velvet dish; fie, fie!—
Why 'tis a cockle or a walnut shell,
A knack, a toy, trick, a baby's cap:
Away with it! Come, let us have a bigger.

ON LOVING.—The more tenderly and warmly one loves, so much more does he discover in himself defects rather than charms, that render him not worthy of the beloved. Thus are our little faults first made known to us, when we have ascended the higher steps of religion. The more we satisfy the demands of conscience the stronger they become. Love and religion are here like the sun. By mere daylight and torchlight, the air of the apartment is pure and undisturbed by a single particle; but let in sunbeam, and how much dust and motes are hovering about.—*J. P. Richter.*

Down the Slope.

Youth looks upward. The way of life for us all, for a season, lies up the hill. We climb the years, and climbing we are content. If we could always mount upward we might ever remain content, but unfortunately there comes a time when the path inclines, and it is a downward path thereafter until the end.

The evening of every man's life is coming on apace. The day of life will soon be spent. The sun, though it may be up in mid-heaven, will pass swiftly down the western sky, and disappear. What shall light up a man's path when the sun of light has gone down? He must travel on to the next world; what shall illuminate his footsteps after the nightfall of death, amid the darkness of his journey? What question more important, more practical, more solemn, for each reader to ask himself?

That is a long journey to travel without light, without a guide, and without a friend. Yet every man must perform it. The time is not far distant when all men begin the journey. There is an evening star in the natural world. Its radiance is bright and beautiful, and cheering to the benighted traveler. But life's evening star is a good hope of heaven. Its beauty and brilliancy are reflected from the Son of Righteousness, whose bright rays light up the evening of life, and throw their radiance quite across the darkness of the grave into Immanuel's land. It has illuminated the footsteps of many a traveler into eternity. It is of priceless value. A thousand worlds cannot purchase it; yet it is offered without money and without price to him who will penitently and thankfully receive it.

WOMAN'S WORK.—A girl of only seventeen years located a farm in Kansas some three years ago. The land was perfectly wild and she employed no male help, but her success has been such that she was recently offered for her farm a sum ten times the amount she paid for it. She refused the offer, and says that in five years more she will retire to the East, and live on the interest of her property.

MISS F. LUCILLA TREMBLY, daughter of Dr. Trembly, of Toledo, Ohio, on receiving her diploma from Granville Female College last summer, went home, took charge of her father's books, collects his bills, and does the work of a business agent. Her set of books are as correct as those of any accountant. Lately, when her birthday anniversary came she was the recipient of numerous gifts, and her father improved the occasion to manifest his appreciation of her services by presenting her \$1,000.

DOMESTIC LIFE.—The banes of domestic life are littleness, falsity, vulgarity, harshness, scolding, vociferation, an incessant issuing of superfluous prohibitions and orders, which are regarded as impertinent interferences with the general liberty and repose, and are provocative of rankling or exploding resentments. The blessed antidotes that sweeten and enrich domestic life, are refinement, high aims, great interests, soft words, quiet and gentle voices, magnanimous tempers, forbearance from all unnecessary commands or dictation, and generous allowances of mutual freedom. Love makes obedience higher than liberty. Man wears a noble allegiance, not as a collar, but as a garland. The Graces are never so lovely as when seen waiting on the Virtues; and where they thus dwell together, they make a heavenly home.

CURIOUS CHINESE PROVERBS.—The ripest fruit grows on the roughest wall. It is the small wheels of the carriage that come in first. The man who holds the ladder at the bottom is frequently of more service than he who is stationed at the top of it. The turtle, though brought in at the area gate, takes the head of the table. Better be the cat in a philanthropist's family, than a mutton pie at a king's banquet. The learned pig didn't learn its letters in a day. True merit, like the pearl inside an oyster, is content to remain quiet till it finds an opening. The top strawberries are eaten first. He who leaves early gets the best hat. Pride sleeps in a gilded crown; contentment in a cotton nightcap.

CHILDREN'S SCRAP BOOKS.—It is well to save childish pictures and wood cuts of various kinds, (many of which give children an excellent idea of places), and paste them into an old ledger or copy book. They help pass away many a childish hour and are at once innocent and instructive. With the help of questions from their elders, they aid the children to think.

Young Folks' Column.

John Horner, Esq.

Who has not heard of this famous individual? Who does not remember of being told in his youth about Jack Horner? And who has not envied his good fortune when he

"Sat in a corner eating his Christmas pie;
Put in his thumb
And pulled out a plum,
And says, what a good boy am I?"

Have the children ever inquired who was Jack Horner? Here is the tradition: When Henry VIII. suppressed the monasteries, and drove out the poor old monks from their nests, the title-deeds of the Abbey of Wells—including the sumptuous grange built by Abbot Selwood—were demanded by the Commissioners. The Abbot of Glastonbury determined that he would send them to London; but as the documents were very valuable, and the roads infested by thieves, it was difficult to get them safely to the metropolis. To accomplish this, however, he devised the following plan: He ordered a pie to be made—as fine a pie as ever smoked on a refectory-table. Inside he put the documents—the finest lining a pie ever had since pies were first made. He intrusted this dainty to a lad named Horner to carry up to London, to deliver it safely into the hands of those for whom it was intended. But the journey was long and the day was cold, and the boy was hungry, and the pie was tempting, and the chance of detection was small. So the boy broke off a piece of pie and beheld the parchment. He pulled it forth innocently enough, wondering how it could have reached there, tied up the pastry and arrived in town. The parcel was delivered, but the title deeds of the Wells Abbey estate were missing—Jack had them in his pocket. These were the juiciest plums of the pie. Great was the rage of the Commissioners, heavy the vengeance dealt out to the monks. Jack kept his secret, and, when peaceable times were restored, claimed the estates, and obtained them.

What Annie found in Her Stocking.

"Annie, you say Santa Claus has been here, What did you find in your stocking, my dear?"
"Lots of pretty things, isn't it queer, Doss Santa Taus knows I's been dood 'is year. See mamma, here's a dolly with eyes so black, And Oh, such a tumming little red sack.
Here is a fiddle, doss Santa Taus knows I shall want to make my dolly some tuse;
A red covered book, full of pictures, too; Doss Santa Taus wants me to 'ead to oou.
And here is a birdie with silver wings, Nuts, and sugar-plums, lots of fings.
I's in a hurry! Pease mamma, may I do And show my presents to little Fred Lowe?"
—*Jenna Raet.*

Spicy Sayings.

A LITTLE boy embodied his thoughts on theology in words thus: "I don't see how the devil come to turn out so bad, when there was no other devil to put him up to it."

A LITTLE thing in a Sabbath school was asked by her teacher if she always said her prayers night and morning? "No, miss, I don't." "Why, Mary, are you not afraid to go to sleep in the dark without asking God to take care of you, and watch over you till morning?" "No, Miss, I ain't—eaise I sleep in the middle."

A boy called a doctor to visit his father, who had the delirium tremens. Not rightly recollecting the name of the disease, he called it the *devil's troubles*—making very poor Latin, but very good English.

Oddities.

THE LAST THING OUT.—The truth.

FOOT NOTES.—Shoemakers' bills.

THE LARGEST INSECT KNOWN.—Humbug.

VISIONARY FRUIT.—The apple of the eye.

A PRIMARY ROCK.—The rock of the cradle.

SONG OF THE BUMBLE-BEE—"Hum, sweet hum."

A HANDY TUNE.—Fortune. It is not common metre.

At ten years of age Charles Dickens, the great English novelist, was a poor little drudge in a blacking factory. Let the boot blacks look up. There is no telling where some of them may be yet.

DECEIT deceives a little mind.

DOMESTIC ECONOMY.

Animal Food.

A late number of the *Galaxy* has an article, by Dr. C. Draper, upon animal food for man. The Doctor does not agree with the vegetation philosophy. We do not know but the question of meat or no meat will be one of debate while the world stands. Concerning the influence of climate upon diet, Dr. Draper speaks as follows:

"Custom and religion have, it is true, a certain influence over the diet of a nation, but the habits of a people in this respect are, to a great extent, under the control of climate. The inhabitant of a torrid region delights in the fruits and succulent vegetables with which nature bountifully supplies him, and does not care to undergo the fatigue and exertion necessary to obtain animal food, when luscious fruit are ready to fall into his mouth. He lives surrounded by a warm, moist atmosphere, he does not require much heat-making food; the very air is enervating, and why should he exert himself when there is no necessity? The dwellers in arctic regions, on the contrary, must burn away rapidly in order to keep the temperature of his body at the point required to sustain the processes of life. Animal food therefore becomes the urgent requirement of his existence, and since fat furnishes the greatest amount of heat in a given bulk, he seeks greedily for the blubber of the seal or whale, and a glass of oil is to him far more desirable than the choicest wine of a Comet vintage.

"Between these extremes we find the inhabitant of the temperate zone, who, while he declines to partake of the grosser food of his northern neighbor, agrees with him in his craving for flesh of all kinds, and prizes especially venison and every species of game. At his table the fruits and vegetables of the southerner also have their place. He occupies the position that nature has intended for his race. He is an omnivorous animal and with such a diet, and under favorable skies reaches the highest development of which his kind is capable. It is interesting to notice that when the system has become accustomed to a mixed diet, a total abstinence from either animal or vegetable food causes the disease known as scurvy. It is a popular error to suppose that this condition is the result only of a want of vegetable food. This error has arisen from the fact, that, heretofore, in long voyages, vegetable food has been deficient in quantity, but we now know that a species of scurvy may arise from a deficiency in the supply of animal food."

Hard and Soft Boiled Eggs.

It is understood that eggs are more easily digested if "rare" than "well" done; but which portion of the egg resists digestion—the "white," which is nearly pure albumen, or the yolk? Lately experiments have been made in this direction with ample opportunity of demonstrating that healthy gastric juice, which the stomach secretes for purposes of digestion, will not act readily on firmly coagulated white of egg, even if cut in pieces not larger than ordinary peas (and that is as fine as people usually chew their food!), while it acts with facility upon the more brittle yolk. The reason is that the coagulated albumen is very compact and tenacious, and would need to be "ground to powder" to accept the chemical affinities of the gastric juice.

Pour into a basin boiling water sufficient to cover the eggs, put the eggs into the water and let them remain 10 or 15 minutes, according to circumstances and your own taste; keep the water nearly up to boiling temperature, but don't boil the eggs. Fresh eggs will cook more quickly than old ones, and of course small ones quicker than large ones. By this process you will find the yolks well cooked, while the white is left in a condition to digest readily.

MOTHS.—In India, upholsterers and saddlers are badly troubled with moths in their work, especially in the rainy season; and the upholsterers in that country follow a series of simple rules by which they entirely avoid the ravages of these pests. They never put on a burlap or cotton covering without first steeping it in a solution of sulphate of copper, made by dissolving about one ounce in one gallon of boiling water, and then quickly drying the material in the sun or by a hot stove. For over coverings, especially if of wool, a solution of corrosive sublimate dissolved in patent

colorless alcohol is frequently used with good effect. The boiling solution of sulphate of copper is often applied to a floor previous to laying a mat or carpet, and invariably under heavy articles of furniture.

Oil Among the Ancients.

The ancients knew no method of refining oil. As a great luxury, they mixed it with perfumes, such as essence of roses and sandal-wood; but this rather detracted from than added to the burning properties of the liquid, and all that was obtained by the process was an increase of fragrance and a diminution of light. The dwellings of wealthy men, who expended extravagant sums upon scented oils, would not have borne comparison, in point of lighting with the grimest top-room of a gas-lit public house. The gold and silver lamps, hung by slender well-wrought chains to marble pilasters, only yielded at their best a lurid tapering flame, that gave out an enormous deal of smoke, fluttered in the slightest breeze, and went out altogether at a gust of wind. Neither was it possible to steady the light by closing the apertures through which the air came; for, had Roman or Grecian houses been possessed of glass windows, they would soon have become uninhabitable.

The fresco paintings of Pompeian villas, the delicate colors on the walls of urban palaces, would in less than a month have been hopelessly coated with lamp soot. At the end of an hour's conference of an evening, a party of noble Romans would have resembled a congregation of chimney-sweeps. A tunic died in Tyrian purple would have acquired a mourning hue in no time.—*All the Year Round*.

Hollow Measure in the United States.

The following data with regard to measurements will oftentimes be found convenient for reference:

A barrel contains 40 gallons of 321 cubic inches, or 9,240 cubic inches.

The normal bushel is the Winchester; this ought to have the diameter in the clear of 18½ inches, to be 5 inches deep, and to have the capacity of 9.25x9.25x3.1416x8, or about 2,150½ cubic inches.

A box 24 inches square and 16 inches deep has a capacity of 9,216 cubic inches, or nearly a barrel. A box 17½x15x8 inches contains 2,130 cubic inches, or nearly a bushel. A box 14½x10x7½ inches contains 1,075 cubic inches, or exactly a half bushel.

A box 8x8x5-12 inches contains 538 cubic inches, or almost exactly a peck or quarter bushel. A box 7x8x4½ inches contains 231 cubic inches, or a gallon. A box 6x6x3½ inches contains 117 cubic inches, or nearly a half gallon of 115½ cubic inches. A box 4x4x3½ inches contains 56 cubic inches, or nearly a pint or quarter gallon (57½ cubic inches.)

A New Use for Fresh Eggs.

Mr. John Murphy of this city—a gentleman of intelligence and close observation—recently made to us some interesting statements in regard to the value of fresh eggs in affording nourishment to weak animals, that are worth remembering by all farmers. He remarked that he had known a young colt which to all appearances was nearly dead, the breath of life being barely perceptible, to be quite instantly revived by giving it one or two fresh eggs. The same results, in several cases to which he was knowing, have followed the administering of eggs to weak calves, and also to feeble and chilled lambs. A remedy so simple, so easy at hand and so effectual in the cases mentioned—which often occur with calves and lambs—should be remembered by all our readers.

CORNSTALK SYRUP.—S. W. Bloom, of Broomstown, Ind., has made from common cornstalks a syrup superior in flavor to sorghum, though there was a sorghum flavor discernible. The yield is nearly equal, per acre, to that of sorghum, and does not interfere with the production of green corn for market, from the same stalk.

HORSERADISH SAUCE.—One teacup of grated horseradish, one wineglass of good cider vinegar, into which has been dissolved a dessert-spoonful of loaf sugar, the same of mustard, a teaspoonful of salt; stir this to the horseradish. Serve with hot or cold meats.

When a cork gets inside a jug or bottle, and you desire to remove it, tie a good-sized knot in the end of a stout cord, run it into the vessel, shake the cork down to the neck, and then pull it out. Don't you see how easy it is?

Domestic Receipts.

RECIPE FOR HAIR EMBROCATION.—Oil cajeput, two drachms; alcohol, 12 oz.; glycerine, 1oz.; bay rum, 2½ oz.; cologne, 2½ oz. This makes a fine dressing for the hair, keeps the scalp healthy, and is very refreshing.

SAUCE FOR PLUM PUDDING.—Of fresh butter and loaf sugar, a quarter of a pound each, which must be ground until there is not a particle of grit in it; the butter to be half melted and beaten up with the sugar like whipped cream; then stir in gradually a glass of brandy and a glass of sherry. This sauce must be served cold. It should not be made until near the time it is to be served up, allowing at least a half an hour to whip it; it should be pretty stiff if properly made, like ice cream.

INDIAN MEAL PUDDING.—Two quarts of milk, nine tablespoonsful of meal, let it boil, then add four eggs, a piece of butter, half a cup of brown sugar, one of molasses; flavor to taste.

GINGER BREAD.—Two cups sugar, or molasses, one of butter, one cup sweet milk, one tablespoonful of ginger, two teaspoonsful soda, mix soft.

PUFF CAKE.—One cup of butter, one teaspoonful of soda, two cups of sugar, two teaspoonsful cream tartar, three and a half of flour, one cup of milk, and three eggs.

MOSS CAKE.—Two cups sugar, one cup of milk, half a cup butter, four eggs, two teaspoonsful of soda, four of cream tartar, one small quart of flour, two teaspoonsful lemon; sprinkle a few dried currants over the top; when baked, sprinkle white sugar over the top. This receipt makes two loaves.

APPLE SAUCE.—Stew or bake acid apples; when done mash and strain them. To a pint add a small piece of butter; sweeten to taste; grate over it a little nutmeg; serve with pig, goose, or ducks. Dried apples and peaches stewed, and sweetened and seasoned with lemon or orange peel, or nutmeg, makes a good accompaniment to fresh meat. Stewed cranberries make a superior sauce for meats or poultry.

CREAM CAKE.—One cup sugar, one and a half cups of butter, one and a half cups of milk, two eggs, one and a half teaspoonsful of soda, one of cream tartar, two heaping cups of flour; flavor to your taste, then add the cream; one heaping tablespoonful of flour, two of sugar, one egg, one and a half pints sweet milk, scalded, pour in the mixture, stirring all the time; let it boil a moment, get cold; cut the cake when cold and spread on the cream, flavored to your taste.

Mechanical Hints.

FINE GREEN BRONZE.—First boil the work in a strong solution of potash to get off all the old lacquer and grease; next wash in clear water, after that let the work stand a day or two in a weak solution of nitric acid, then take out, wash, and dry; then coat the article with some good black lead. Polish until you have a good black glossy surface; then put on your yellow lacquer, which, put on a black surface, is your green bronze.

WATERPROOF GLUE.—A glue that will resist both fire and water may be prepared by mixing a handful of quicklime with four ounces of linseed oil, thoroughly levigated, then boiled to a good thickness, and kept in the shade, on tin plates, to dry. It may be rendered fit for use by boiling it over a fire in the ordinary manner.

AMERICAN FURNITURE ABROAD.—During the week ending Dec. 12th, there was exported from the port of New York five cases of redwood to Stittin; two pianos and seven hundred and fifty fine packages of furniture, valued at \$9,932 to Peru; eleven boxes of furniture and one hundred logs of maple to London; seven packages of furniture to the British West Indies; twenty-five logs of maple to Havre; twenty-nine packages of furniture, valued at \$1,510 to Hayti; fourteen cases of furniture to Central America; eleven packages of furniture to New Grenada; three packages of furniture to Venezuela, and thirty-four packages of furniture to Brazil.

On the 14th of the same month, eight cases of furniture were shipped from New York to Constantinople; fifteen cases to Havana; nineteen packages of furniture to Point a Petre; one hundred cases of furniture to Rio Janeiro; seven packages of furniture, one piano and eight cases of oil cloth to Vera Cruz.

On the 16th, one hundred cases of furniture, shipped from New York to Bombay, and ten hundred and sixty seven packages of furniture to Sydney.

LIFE THOUGHTS.

Be praised not for your ancestors, but for your own virtues.

FORGIVENESS is the odor of sweet flowers when trampled upon.

NEVER despise humble services; when large ships run aground, little boats may pull them off.

Be noble, and the nobleness that live in other men, sleeping but never dead, will rise in majesty to your own.

GREATNESS lies not in being strong, but in the right use of strength.

THE road ambition travels is too narrow for friendship, too crooked for love, too rugged for honesty, and too dark for conscience.

NEVER get another to do for you what you can just as well do for yourself. Money thus paid out is thrown away.

If you would be pungent, be brief; for it is with words as with sunbeams—the more they are condensed the deeper they burn.

THERE is a certain softness of manner which in either man or woman, adds a charm that almost entirely compensates for lack of beauty.

BETTER be right than conquer in an argument. Better bear the assumption of ignorant men than waste your dearly bought experience on fools.

LIFE is a voyage, in the progress of which we are perpetually changing our scenes.

We first leave childhood behind us, then youth, then the years of ripened manhood, then the better and more pleasing part of old age.

PROFANITY never did any man the least good. No man is richer, or wiser for it. It commends no one to any society. It is disgusting to the refined, abominable to the good, insulting to those with whom we associate, degrading to the mind, unprofitable, needless and injurious to society.

Diffusers Happiness.

Some men move through life as a band of music moves down the street, flinging out pleasure on every side through the air to all, far and near, who can listen. Some men fill the air with their presence and sweetness, as orchards, in October days, fill the air with the perfume of ripe fruit. Some women cling to their own house, like the honeysuckle over the door, yet, like it, fill all the region with the subtle fragrance of their goodness. How great a bounty and blessing is it to hold the royal gift of the soul that they shall be music to some and fragrance to others, and life to all! It would be no unworthy thing to live for, to make the power which we have within us the breath of other men's joys; to fill the atmosphere which they must stand in need of with the brightness which they cannot create for themselves.

DESPAIR antedates misfortune, and torments a man before his time. It preys upon the vital life Prometheus' vulture, and eats out the heart of all other satisfaction. It cramps the nature, and cuts the sinews of enterprise. I would not despair unless I knew their revocable degree was past, unless I saw my misfortune recorded in the book of fate, and signed and sealed by necessity. To believe a business impossible is the way to make it so. How many feasible projects have miscarried through despondency, and been strangled in the birth by a cowardly imagination.

DO YOUR OWN THINKING.—Yes, that is the idea. Think for yourself. It is well to listen to the expressed thoughts of others, and it is an agreeable pastime to give expression to your thoughts. But when alone, weigh what you have said. What you thus gain from surroundings, you will unwittingly transmit to the rising generation, and the result will be that you will do your share in elevating the human family.

THE prayer which Socrates taught his disciple Alcibiades deserves a place in the daily devotion of every Christian. "That he should beseech the supreme God to give him what was good for him though he should not ask it, and to withhold from him whatever would be hurtful, though he should be so foolish as to pray for it."

THERE is not man on earth, however humble, who is a blank; there is not one man in society who is not either a blot or a blessing. You have therefore, to make your choice, and you cannot choose otherwise, whether you shall be a blessing, limited it may be; but still, blot or blessing, by no possibility a blank, must each of us be.

TO POST-MASTERS. The Publishers of the **PACIFIC RURAL PRESS** now offer to the Post-masters and regular Agents throughout the Pacific States exceedingly liberal terms for soliciting subscriptions to such a weekly as they can with all confidence recommend with pride, thus promoting home industry; and subscribers will thank and honor you for it. Be cautious of recommending journals which you are not positive are up to the wants of subscribers on this coast. Bear in mind, too, that a monthly journal of equal size to ours, at \$1 a year, is far dearer than the **RURAL PRESS** at \$4, with thirteen issues every quarter. Get up clubs for your home paper. It has a greater variety of fresh and live reading, which can be heartily appreciated here, than any other **HOME AND FARMING CLUBS. JOURNAL**. Its popularity with its readers is unsurpassed. Send for sample copies and rates to agents. Get up lists this year and you can easily renew them next. See subscription rates on 8th page. Work commenced at once will not be regretted. **DEWEY & CO., Publishers.**

Daily Record,

By the U. S. Army Signal Service, for the week ending Wednesday, January 24, 1872.

Date and Observation.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Sea.	Force of Fog.	Approx. Temp.	Amount of Rainfall.	State of Weather.
Thursday...	30.24	59	S.	1	Light		59		Clear
Friday...	30.18	49	N.W.	5	Gentle		49		Clear
Saturday...	30.19	48	N.W.	12	Fresh		48		Cloudy
Sunday...	30.24	49	N.W.	6	Fresh		49		Cloudy
Monday...	31.29	50	N.W.	5	Gentle		50		Cloudy
Tuesday...	30.25	50	N.W.	18	Stormy		50		Cloudy
Wednesday...	29.82	50	N.W.	18	Brisk		50		Clear
Thursday...	30.17	49	E.	5	Gentle		49		Clear
Friday...	30.17	49	E.	5	Gentle		49		Clear
Saturday...	30.17	49	E.	5	Gentle		49		Clear
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Can now be secured to advantage under the NEW LAW in the United States. Parties interested will be furnished with all information desired, and have their application intelligently prepared and promptly forwarded to the Patent Office, and their patents secured in good time, by DEWEY & CO., U. S. and Foreign Patent Agents, No. 414 Clay street, S. F. bp-16p

Something New in the United States.

SEEDS

—OF THE—

FAMOUS TURKISH MUSKMELON,

Which Keeps Sound the Year Round,
A LUXURY FOR ALL SEASONS.

Now for Sale for the first time in this country, by DEWEY & CO., of this office.

Small packages will be sent, post paid, to any part of the Union for 50 cents.

These Melons are certainly a remarkable production, and we believe fully worthy of a trial by those who are fond of this kind of Fruit and would like the convenience and novelty of having it throughout the year. The following is from the introducer, who has given us the sole agency for furnishing the Seeds throughout the United States:

December 29, 1871.

MESSRS. DEWEY & CO.: I herewith send you, per Wells, Fargo & Co.'s Express, a fine lot of seeds of the celebrated Turkish Muskmelon, which you are at liberty to dispose of.

Now, as you are aware of and know of its value and the rarity of such Seeds and Melons in the United States, they therefore ought to command a good deal of attention. You may introduce them, with the exclusive agency, in any market on the Continent. They will grow in any soil that any other Melon will grow in. The usual time of setting Melons will suit them. At the maturity of the Melon, for winter use, you must be careful and not bruise it; handle it carefully, and when ripe, place it in twine netting or its equivalent, hang it up, and I will guarantee that it will keep the year round and retain its fine flavor—the same as if it had just been plucked from the vine.

It has cost me time, and trouble, and expense in procuring the Seeds first. Furthermore it has been my desire to prove their success on this coast. They have given entire satisfaction thus far (two seasons), and I have not the least doubt but that they will grow successfully in any part of the United States. This is the only lot that I know of which has ever been imported to the United States. Therefore, from its rarity, and from the rich flavor which it contains, its cultivation is a great object, and will enable its possessor to say, in mid winter, "Let us eat a melon," which should be sufficient to open the ears of the epicurean, at the hotel or in his own private dining room.

Respectfully, etc., R. MARCHELLA.

Nineteen Years in the Nursery Business in California.

A. D. PRYAL,

Nurseryman,

Three Miles North of Oakland, on the Temescal Creek,
One Mile from Temescal R. R. Depot,
Offers for sale a good assortment of

Fruit and Forest Trees,
Including Blue Gum, Monterey Cypress, Pines, Orange and Lemon Trees.

A large assortment of choice varieties of English Gooseberries, Currants of all good sorts, Barberries, Roses and Climbing Plants, of new and old varieties.

Also the largest collection of Lilacs in the State. A fine assortment of choice Bulbs at low prices.

All orders directed to Oakland P. O., Cal., will be promptly attended to. ja20-1m

Ramie Roots for Sale,

IN LOTS TO SUIT.

BY JOHN S. DRURY,

At C. F. RICHARDS & Co.'s Drug Store, S. W. corner of Clay and Sansome streets, San Francisco.

And by W. W. DRURY, at RAMIE NURSERY,

on American River, near Central Pacific Railroad Bridge south side, Sacramento.
21v2-3m

Cheap Fruit Trees and Plants.

Apple Grafts on whole roots.....\$10.00 per M.
Pear Grafts on whole roots..... 18.00 per M.
One Year Apple Grafts..... 40.00 per M.
One Year St. Pear..... 75.00 per M.
Wilson Strawberry Plants..... 2.50 per M.
Quince and Currant Cuttings, Cheap.

Address WILL & CLARK,
ja20-1m16p Fayetteville, N. Y.

IMMENSE STOCK OF APPLE,

AND OTHER

FRUIT TREES, VINES AND PLANTS,

Of Finest Quality, at Astonishingly Low Rates.

Extraordinary inducements to wholesale buyers. Catalogues Free.

4v3-3m STARK & BARNETT, Louisiana, Mo.

AVERILL'S

CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
Office, corner Fourth and Townsend streets, Francisco.
HELIX & JEWELL, Agents.
15v23-3m

SILK WORM EGGS.

FOR SALE—A few ounces of Choice Silk Worm Eggs

(French Annual). Apply at

Ja20-2w Room 32, Merchants' Exchange.

LINFORTH, KELLOGG & CO.,

IMPORTERS OF

HARDWARE

AND

AGRICULTURAL IMPLEMENTS.

The attention of Farmers is respectfully called to the following Superior

GANG PLOWS,

Which we now offer as the BEST hitherto made:

PACIFIC RAILROAD,

MONITOR,

EUREKA.

General Agents for the Pacific Coast for the Celebrated

WORLD MOWERS AND REAPERS,

BALL'S OHIO REAPERS,

TORNADO THRESHERS.

Rumsey's Lift and Force Pumps,

WOOLWORTH HANDLE WORKS,

LEARY RAILROAD LANTERN,

Etc., Etc., Etc.

IRON PIPE, RUBBER HOSE, RUBBER AND

LEATHER BELTING, ROPE AND FENCE

WIRE, ALL AT LOWEST

MARKET RATES.

3 and 5 Front Street, San Francisco.

WILLCOX & GIBBS

IMPROVED NOISELESS

Family Sewing Machine

IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.
Call on or address

WILLCOX & GIBBS S. M. CO.,

113 Post Street, S. F.

22v2-9m

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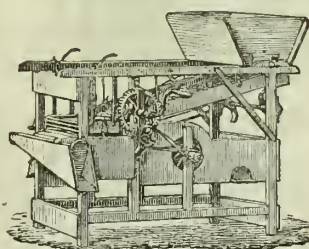
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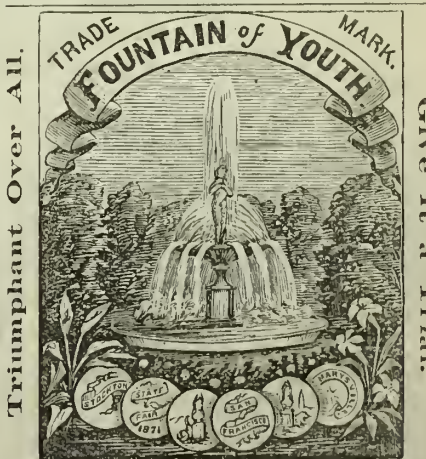
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I am prepared to furnish my popular Gang and Single plows, of the lightest draft (best Plow to scour in sticky soil), and the most efficient Plow made. My leverage for raising the gang has no equal—a thirteen year old boy can work it with ease. I make any pattern of mould desired, to order. Twenty years experience in plow making enables me to demonstrate all I say, and every Plow is warranted to do all I recommend it to perform.

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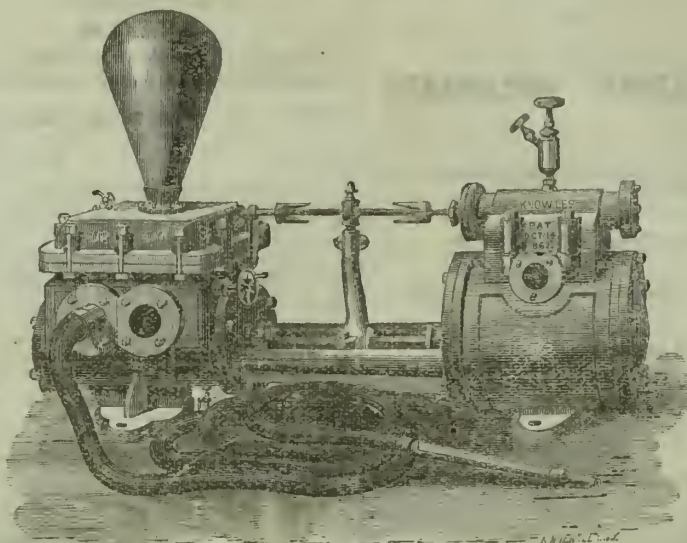
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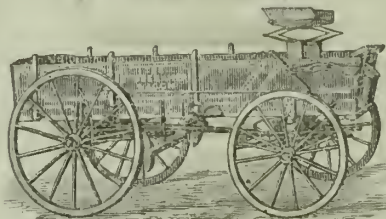
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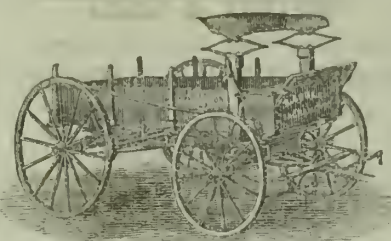
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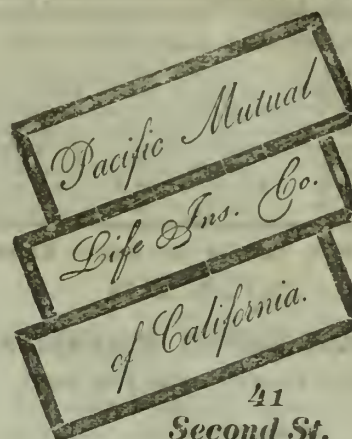
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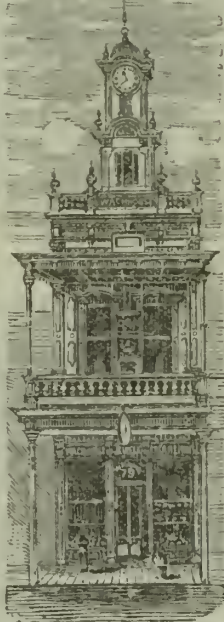
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Parties planting can find in this establishment whatever may be wanted, for use and beauty, in furnishing a place without being obliged to go from one Nursery to another.

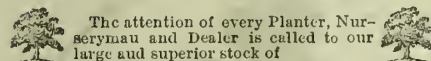
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IN LARGE QUANTITIES, AT LOWEST RATES.

Catalogue furnished on application.

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Apples, Pears, Plums, Peaches, Apricots, Nectarines, Figs, Quinces, Cherries, Oranges, Pomgranates, Mulberries, Grapes, Currants, Gooseberries, Blackberries, Raspberries, Strawberries, etc.

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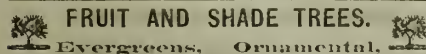
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My stock embraces all the celebrated varieties that are favorably known, including the justly celebrated "HALE'S EARLY PEACH," the Salway, Freemason and other new varieties. Also, GRAPEVINE AND CUTTINGS of the leading sorts; 100,000 Blackberry and Raspberry plants of the most popular kinds, warranted true to name; Mulberry Trees, for feeding Silkworms, in quantities to suit. All offered at low prices.

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Evergreens, Ornamental, and FLOWERING PLANTS, and all general productions of the Nursery and Garden.

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Pricing to suit the times. Wholesale and retail. Call and examine stock at Depot, J street, between Seventh and Eighth, next to P. H. Russell's grocery store.

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By the 100, 1,000 or 100,000, both

Wholesale and Retail, at the

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Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

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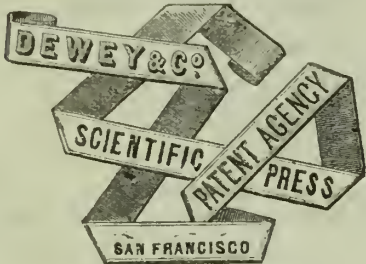
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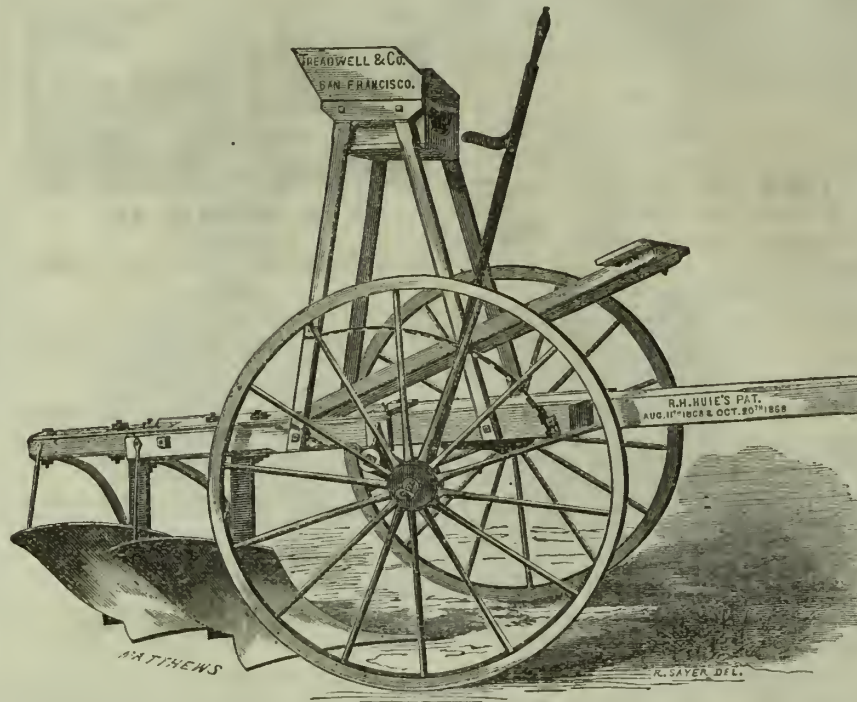
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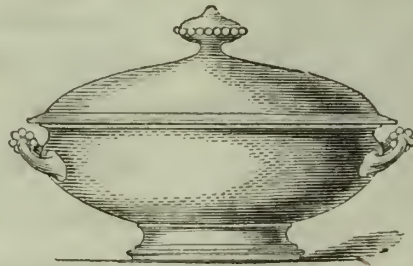
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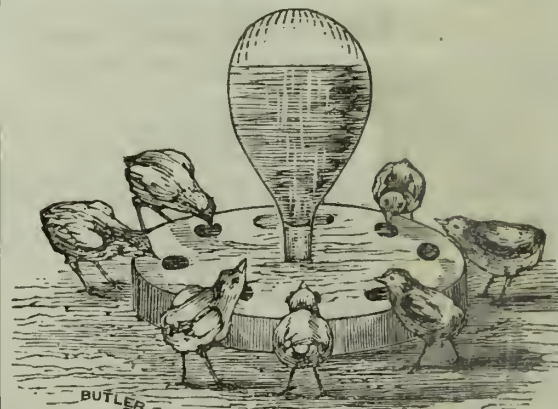
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GOLDEN POLANDS, Non-Setters and Fine Layers; SILVER POLANDS, Non-Setters and Fine Layers; WHITE COCHINA, BUFF COCHINA, DUCK WINGED BANTAMS, GOLDEN SEABRIGHT BANTAMS, JAPANESE BANTAMS, HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruff-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

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China and Chester Whites; the Largest and Best bred in America.

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Light Brahmas.

FIVE PAIR, bred from the Celebrated Jackson Cock.

\$20 per Pair. Seven Months Old.

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Cattle, Sheep, Swine, Poultry.

Original Breeders of CHESTER WHITE PIGS. Send stamp for Catalogue. JAS. STEWART & CO., Kennet, Chester county, Pa.

4v3-6m



Volume III.]

SAN FRANCISCO, SATURDAY, FEBRUARY 3, 1872.

[Number 5.]

The Musk or Brazilian Duck.

Any calculation as to the returns to be realized from keeping ducks, depends almost entirely on the suitability of the locality. They are kept with the least trouble and greatest profit when they can have a wide range, and access to water and moist ground, so that they can forage freely; for if they are kept under constant feed their ravenous appetites, will soon "eat their heads off." They may be kept in health in small enclosures and with only water to drink—of which they require a large quantity—but not too much profit, a point which is the usual object of all kinds of farm and barn-yard stock.

When kept close and fed mostly on grain their eggs though less in number are much better in quality, than when suffered to run at large. When allowed to run at large they should be got up every night and confined or they will drop their eggs carelessly about their range, rendering their collection a source of much trouble. Moreover, a duck generally lays when hens' eggs are plenty, and adds nothing to the egg-basket when they are most wanted.

The most approved varieties of ducks are the Aylesbury, the Rouen, the Cayuga, the Wood or Summer duck, the Crested, and the Musk or Brazilian duck. We give herewith a very fine illustration of a trio of the latter, for which we are indebted to Thos. E. Finley, manager of the California Stock and Poultry Association.

The color of the duck is of a very dark, rich blue-black chromatic, with every color of which blue is a component. It has a white bar on the wing, and some white about the head and neck. The feathers on the back of the male are somewhat fine and plum-like, the legs and feet are dark. This variety is of very large growth and is said to be very prolific in warm latitudes. The drakes often attain a weight of ten pounds when well fattened, although the female usually exceeds 6 or 6½ pounds.

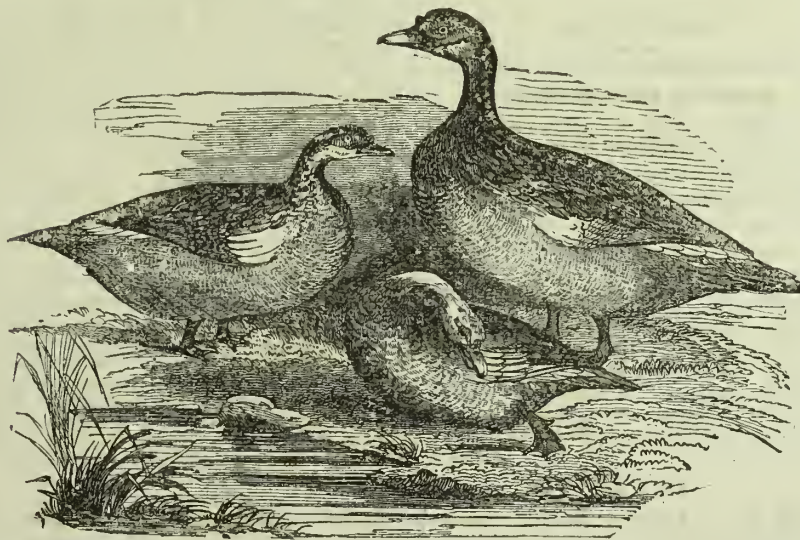
This duck was formerly supposed to be found in its wild state only in the central portions of South America—hence its name; but this supposition is now known to be incorrect as identically the same species are found wild in the central and western part of New York, especially about Lake Ontario and the small interior lakes of the State named. It is easily distinguished by a red membrane surrounding the eyes and covering the cheeks.

HERDGRASS.—This excellent grass, known in different parts of the Atlantic States by the names of Herdgrass, Timothy, and in England as Catstail grass, is acknowledged to be the best for valuable hay, known to the agriculturist. Its fattening properties are such, that cattle fed on the dry hay made from it, without any addition of grain, are easily and speedily fitted for the beef market, and is everywhere esteemed only barely second to oats for horse feeding. It will produce on favorable soil from three to five tons of dry hay at a cutting; and never "lodges"—falls down from overgrowth. It is easily cut by machine and dries speedily. The best soils are deep loams or river bottoms, and upon such soils it will make a second growth the same season; but where the ground is hard and dry, only abundant irrigation immediately after the first crop is taken off will cause it to yield anything more than a light second growth. Still it is one of the most valuable of our grasses and should be introduced and extensively cultivated on our reclaimed tules. The second growth is just the grass for the winter feeding of stock, and has only to obtain a trial to be duly appreciated. As a salable hay, it commands a higher price than any other, in all Eastern markets.

Water Lifting.

A Corinne correspondent wishes to lift water a distance of 25 feet, and wants the cheapest and best machinery for the purpose. Has wind power in abundance, and can obtain horsepower at a cheap rate; but wood for an engine is costly. At an elevation above the level of the sea of 5,000 feet, which is nearly the elevation of Corinne, it would be difficult to raise water more than 25 feet, with one of the ordinary lift pumps. A common force-pump would of course lift the water to a much greater height; and if a pump operated by atmospheric pressure is used at all, you had better have this kind, though costing you perhaps 25 per cent. more than the ordinary lift pump.

The chain pump as it is called, but which is only a water-lifter, is an excellent arrangement for the purpose, and will carry water to any reasonable height, and is cheaply constructed. The Chinese lifter, so called, is very cheaply constructed, but not well adapted to heights



A TRIO OF MUSK OR BRAZILIAN DUCKS.

more than 10 or 12 feet. Your cheapest power is, probably wind, with a wind-wheel costing from \$75 to \$100. The surest at all times would be horses.

If this should meet the eye of any manufacturer or dealer in water-lifters, by addressing H. A. J., Corinne, Utah, it might be to their interest, as others in the vicinity will doubtless desire similar machinery.

CALIFORNIA ANGORA—CASHMERE—WOOL IN PHILADELPHIA.—We are pleased to be able now to give some definite figures regarding the value of this product, which is likely to become one of our important home staples. Mr. Butterfield has lately received returns from a lot of several hundred pounds of Cashmere goat fleeces, sent to Davis & Faulk, Philadelphia. They assorted it and allowed the following prices per pound in gold:—For fine, \$1.20; low fine, \$1.10; fine Kempy, 80 cts.; low Kempy, 70 cts.; short—from ¾ grade—40 cts; breech—locks—40 cts. We obtain the above information from N. Gilmore of El Dorado. The fleeces sold were from ¾ grade up to full blood. The purchasers express a desire to receive further consignments.

FRUIT CULTURE.—The excellent essay on "Fruit Culture," read by C. W. Reed before the Sacramento Farmers' Club, at their last meeting, received too late for insertion this week.

How to Prevent Cooked Food Fermenting.

Some feeders practicing the cooking system for animals have been much troubled by fermentation, where the food had not been used immediately. This has been caused by too little cooking. Cut hay, straw and bran or meal, thoroughly steamed, will not ferment for two days, even in warm spring weather. Partial cooking hastens fermentation and souring, but every housewife knows that thorough cooking will restore sour preserves and keep them sweet for a time.

The steam box should be kept clean, for any taint of ferment about the cover will be communicated to the new food. So barrels used to steam hog feed in should be occasionally thoroughly cleaned.

Steaming or boiling is frequently done so imperfectly as only to boil a small portion of the food, and this just warms some of it to the proper temperature to produce rapid fermentation. If all those who cook food for hogs will take pains to cook

How Plants Derive their Distinctive Properties.

If we take a large box of garden soil or earth from the grain-field or meadow, and keep it sufficiently moist for the production of vegetation, we can grow in it almost any kind of plant we please; the apple, the orange, the maple, or the conifer in any of its varieties. Now though the juices or fruits of these trees differ as widely as sugar from turpentine, yet they are all unquestionably derived from the soil by the direct action of the water as a solvent; for in pure water there is neither of the properties mentioned. Nor can any appliance of chemistry, or the closest analysis detect either sugar or turpentine in the soil.

It is evident from this, that water only, with such salts as it may hold in solution is first taken up by the roots, and that the character of the wood or fibre of the root, alone determines whether its juices shall be a saccharine or resinous product; and further, that the intensity of character is also determined, as in the case of the maple, by the distance the sap traverses through the wood. Thus it is that the sap from the root of the tree, is only about half as sweet as that obtained from the trunk a few feet above the ground, and the sweetest that can be drawn from the maple tree, is from the end of the limbs.

Following up the analogy, we have demonstrated by frequent experimental tests, that melon vines of all varieties, will produce sweeter and richer melons at longer distances from their roots, than when produced closer to them; but they are never quite so early in maturing.

Grape Sugar.

In answer to "Vine Grower," we would remark, that, though he may be situated remote from a ready market for his sweet table grapes, and desirous of trying to convert a portion of his next season's crop into grape sugar, we would not recommend him to do so; better dry them, for if not a grape suitable for the best quality of raisins, there is always a market for dried grapes at remunerative prices. Tartaric acid to some extent is found in all grapes, and its presence in any considerable quantity is a bar to the ready crystallization of the saccharine product.

By allowing the sweetest varieties of grapes to hang on the vines until fully ripened, which may be known by their beginning to shrivel, very little acid remains. If the juice of such grapes is rapidly pressed out and the concentration by boiling is commenced immediately, and continued without burning till it is brought to the consistency of a thick syrup, by setting the same away in a close cask for four or five months, nearly two-thirds of the whole will be found to be grape sugar, in a very compact mass, often requiring the opening of the cask to remove it.

Having obtained it, however, it is but a dark undesirable sugar, and contains but two-thirds the sweetening power of the same weight of equally dark colored cane sugar; and when, if the object is to make a commercial article of sugar, we take into consideration the fact that, if grape sugar as understood by chemists and candy makers, is wanted for certain manufactures, it can be made at three-fourths the cost from the starch of the potato, and of a quality greatly superior to that from grapes. It may not be generally known that a large part of what is sold as first quality of strained honey, is but glucose, or uncrystallizable sugar made from potatoes.

the whole contents of the barrel or kettle for a sufficient time, they will not be troubled with fermentation.

Another cause of fermentation is in not having the mass sufficiently thick when done, and in "emptying immediately into a cooler."

UNDERGROUND DRAINAGE.—Since the late articles on underground drainage were published in the Press, we have learned that quite a number of persons in different parts of the State have been experimenting in the same direction, especially during the last two dry seasons. Mr. J. M. Asher of San Diego, informs us that a gentleman about four miles from that place has prepared his drains by taking refuse 2x4 joist, plowing out a groove upon one side one-half or three-quarters of an inch deep, and covering the same with short strips of board, the ends of which are so loosely joined that the water can readily make its way upward from every joint. Any person can groove out the joist with an ordinary plow-plane—a few minutes work only being required for each piece of joist. The plan has been found to work admirably well, while the cost of thus preparing the ground is very small. Another gentleman informs us that he has used common V troughs, loosely covered, with most excellent results. There is little doubt but that for gardens, underground irrigation is the most economical mode of artificial irrigation.

CORRESPONDENCE.

Grapes, Wines, and Raisins.

EDITORS PRESS:—The RURAL PRESS of the 14th inst. contains a summary of the proceedings of the Grape Growers Association, on the best grapes for planting in vineyards. There were several errors in naming the varieties, that induces me to correct the report, as the subject may be of seasonable interest to many of your readers. My unfortunate chirography is responsible for having Chasselas converted into Arepelas in one instance, and Chape-las in another; Berger into Boyer; Zinfindel into Zinfriedal; Johannesberg Rieslings into Shaumberg Riesling.

Regarding Varieties.

It was conceded on all sides, that in the present state of viniculture in California, that the variety must be one of heavy product. If too heavy bearing qualities, we can find a grape whose fermented juice has aroma and bouquet; such a grape is best fitted for vineyards with soil and condition suitable for its cultivation. Of the light colored grapes, the Rieslings have a preference for flavor, and would be recommended for the first place in selecting cuttings for planting, but for the want of evidence as to their productiveness. It was not denied that if trained and pruned as we train and prune the Mission grape, the yield is not satisfactory. Dr. Crane's experience has convinced him that trained high the Riesling is a good bearer. Others hold the same opinion, but there is still wanting the test on a sufficiently large scale, to answer the full purpose of exactness.

Bearing Qualities.

There are two kinds of white grapes that have of late increased much in favor, and merit attention for their good bearing qualities, viz: the Golden Chasselas and Berger. The Chasselas variety, are as a rule, good bearers, but the Golden Chasselas, so called, is the largest and has the advantage of possessing a vigorous stock. The Berger is still more productive. There is much tartness in its juice, while the Golden Chasselas abounds in sugar; thus furnishing different requisites in making wine.

High Flavor.

When musk grapes are wanted for their peculiar flavor, preference was given to the Muscatel, otherwise called Rhenish Muscat and Frontignan. Its yield is not so large as some other Musk grapes, as the Muscat of Alexandria (on rich soils) but its flavor is superior.

Quality and Quantity.

Of black grapes experience enough has been gathered to justify the selection of two kinds to satisfy the demand of quality and quantity, viz: the Black Malvoisie and Zinfindel. The first named is a larger bearer than the Mission, and is believed to be more certain. It makes a good white wine when rapidly pressed, and as a red wine, one of better color and better taste than the Mission. The Zinfindel is entitled to all these encomiums, and much more, for it is a still larger bearer than the Black Malvoisie and communicates to its vinous product, a peculiar raspberry flavor and an agreeable tartness.

Varieties for Wines.

This gives us two white and two dark grapes for ordinary white and red wine—one grape for musk wine or to mix with others to communicate flavor. For this end, the Catawba some would be disposed to add. Many excellent varieties are excluded by their objection of being shy bearers, but in planting a vineyard for wine, it is safer to confine the selection to a limited number, trusting to the plan of grafting to make changes, if by experience it is found that others would prove more profitable or better suited to any particular soil.

Table Grapes.

In regard to market grapes, it is manifest that no grape can permanently command the highest price, and hence it is not safe to select for the purpose of selling for table use, that grape which for the time is quoted highest. It happens, however, that in most instances, our best market grapes are valuable for other uses. The Malvoisie, Chasselas and Hamburg, are all good bearers, and well suited for wine. The Muscat of Alexandria, in many soils very prolific, is good, but not perhaps the best for a musk wine, and is likely to be largely used for raisins.

Raisin Grapes.

As regards raisin grapes, attention is

chiefly directed to three varieties: Muscat of Alexandria, Fahir Zagos, and White Malaga, or as sometimes named in California, White Tokay. Among these the Fahir Zagos possesses the recommendation of being most easily dried, of having a thin, delicate skin, and but few seeds. Both the Muscat and Malaga are larger, and would be preferred where size is desired. The Fahir Zagos raisin is better adapted to culinary purposes, the other for table display.

J. A. LOCKWOOD.
Napa, Jan. 25th, 1872.

White River Valley.

We have a correspondent who writes us from Dream Vale House, whose address is Hamilton P. O., Nev. Though his letter is mainly on the subject of securing a patent, he gives, however, a very flattering notice of that section of country. He says: Below me is White River Valley, large and productive, with a large amount of grazing lands both meadow and rolling, the latter covered with bunch grass and white sage. The valley has water sufficient to irrigate all tillable land, and which would produce grain enough to supply all Eastern Nevada. Our soil once considered worthless, has proved to be as productive as the Mississippi valley, and the temperature is quite mild, about the same as Placerville, Cal. And though it has been storming more or less since the 20th of last December, mostly rain, and being only 23 miles from White Pine, Hamilton, where the snow is deep and a freezing temperature, here it is warm, the snow never having been over four inches deep in the valley this winter.

We are about sinking an artesian well to demonstrate the practicability of finding plenty of water. I feel sure we shall be successful, in which case, thousands of acres now worthless, will be brought into market to be quickly settled by thrifty farmers. Nevada with her inexhaustible mines of every kind of minerals, of fabulous richness, has a glorious prospective future.

A. D. R.

Fruit Culture.

An Essay Read Before the Farmers' Club of Sacramento, by Robert Williamson.

The subject of fruit culture is one fraught with deep interest to every thinking mind, and is destined to be a pleasing and profitable study to the end of time. The fruit of the tree and vine is one of God's best gifts to men. But like many of his beneficent gifts is too lightly appreciated and most sadly neglected by the great mass of the people. But the few who appreciate this boon of heaven and have given the subject the consideration which it merits, have found in it a source of pleasure and a store of knowledge rarely found in the study of any other subject. This study is inexhaustible in itself. A man may study it from youth to old age and it is ever new and pleasing. The more we know of it, the more we admire it.

Will it Pay.

But let us turn from the amateur's view of the subject, and look at it from a financial standpoint. We are asked if it will pay? This (with the masses) is the all important question. This question we would answer in the affirmative.

Fruit growing (when intelligently followed) will pay in any part of the civilized world, and especially in California. Not that we have a better market than elsewhere, but because we can produce a greater variety, in larger quantities, and with less labor than in any other portion of the globe with the same area of land. This I am aware will sound like exaggeration. But to convince ourselves that such is the fact, we have only to remember that we have in California, a greater variety of climates and soils, than can be found in any other country of equal extent. Not even the Republic of Mexico or our sister States and Territories on the Pacific Coast, can lay claim to all the advantages which our geographical position gives us in this respect.

Our Climate.

In California we have a climate varying almost from the extreme of heat to the excessive cold; with a soil equally as varied. Hence we need not go beyond the climate of our own State to find a locality where we can successfully grow the tropical fruits, or to find another locality well adapted to growing the fruits peculiar to the northern climates. The intelligent fruit grower has only to decide what he wants to grow, and then select his locality; make a judicious selection of varieties; plant them properly, and give them proper attention afterwards, and he may count on certain success. But he who goes to work to plant a market orchard on a soil or in a climate not adapted to the fruits he intends to grow, or makes a wrong selection of varieties, or takes no pains to plant properly, or takes no care of his trees or vines after they are planted, may, with equal

certainly, count on a disastrous failure. Then he is prepared to proclaim to the world that fruit growing will not pay in California.

I am aware that there is some apology for many failures that have occurred in this branch of business. We have people here from all parts of the world. They came here with their home notions of horticulture, and went to work in accordance with these notions, and after years of unsuccessful toil, were forced to abandon their favorite plans, and, perhaps, their favorite fruits.

A man to be successful in growing fruits in his country must either have a practical knowledge of the business or must avail himself of the benefits of his neighbor's experience.

Fruit Markets.

Now for our market facilities, present and prospective. We have a fair home demand. There is, perhaps, no place in the United States that consume so much fruit (in proportion to numbers) as do the people of California; and good fruit properly handled has always borne a living price in our markets, and prices have been steadily advancing for the past six years, notwithstanding the thousands of acres that we are annually planting in trees and vines. We believe our market will continue to grow better; we are opening up new markets almost daily on all sides of us. We have on the east and north the State of Nevada and the Territories of Arizona, Utah, Colorado, Wyoming, Idaho, Dakota, and Montana, embracing territory larger than all the States east of the Mississippi River; and this immense country is little else than one vast field of minerals. These mines must and will be worked, and they must and will come to California for the great bulk of their fruits, because they have neither the climates nor soils for extensive and varied fruit growing; and we are more adjacent to them than any other good fruit growing country.

The same is true of the vast lumber districts north of us. They must have fruit; and where can they go for variety, and quality, but to California? Moreover, we believe the day is not far distant when there will be a lively demand from the Asiatic continent for our dried and preserved fruits. And if our two years trade with eastern cities has already favorably affected our fruit market, what will be the effect of all these other markets, when fairly opened up? Will not fruit-growing become almost the paramount interest of the State?

Fruits for Profit.

As to the best kinds of fruit to be grown for profit, we would remark that all the southern portion, and many localities in the more northern counties of the State, are well adapted to growing oranges, lemons, limes, olives, dates, filberts, coconuts, almonds, and English walnuts. To these we may add figs, prunes and grapes—the three latter will succeed well in most parts of the State. All of the above named fruits (either green or dry) we are importing in large quantities. It would perhaps not be too much to say that the people of the United States are paying annually to foreign countries the enormous sum of \$100,000,000 for these very articles; every one of which can be successfully grown and prepared for market in our State; for there can be no climate better adapted to drying fruits than ours. In addition to the above we can grow, in most parts of the State, all the other fruits, from the apple to the strawberry; and in the Sacramento valley we can perhaps grow a greater variety of fruit than in any other portion of the State. Our climate is especially adapted to growing the leading fruits such as grapes, pears, plums, peaches, cherries, figs, and apples, and the foothills, or low mountain ranges, are peculiarly adapted to growing the apple. In these districts we can grow as fine winter apples as can be grown in Oregon or the Atlantic States, and they always command remunerative prices in our local markets.

Fruits for General Cultivation.

I would recommend the pear, plum, and grape, as they succeed remarkably well in all parts of the State. The pear and grape can be successfully shipped to eastern cities and sold at remunerative prices. The grape can also be converted into wine or raisins and find almost a world-wide market. The plum also may be dried and shipped to foreign markets at a good profit. We can find a remunerative market in the East for all the plums that we can produce. As to varieties of fruit that we would recommend, it will be impossible in this essay to give them all even a passing notice; we shall therefore only mention a very few of the leading sorts.

As raisin grapes: the White Muscat of Alexandria, the White Malaga, and White Muscatelle; table grapes: Black Malvecia, Black Hamburg, and White Muscat; wine grapes: the White Riesling, Yellow Orleans, and Zinfindel, many other varieties might be mentioned: shipping grapes: the White Muscat and Flame Tokay stand at the head of the list. There are others that ship well, but none we think equal to the two above named. Shipping pears: Bartlett, Easter Burree, Vicar of Winkfield and Glout Moreau—many other varieties, however, will ship well.

We would here suggest as to varieties, that it would be well for parties who can do so, conveniently, to experiment with seedlings. All our varieties of fruit were originally produced from seed, and it is not unfrequently the case, that from 100 or 200 seedlings we may get one or two fine and distinct varieties. Fruits thus produced are generally well adapted to the climate in which they originated. I have

have in my nursery four new varieties of apple, and six of peaches, all of California origin; they are all worthy of extensive cultivation, especially the latter; and some of them I consider superior to any of the old standard varieties.

Notices of Recent Patents.

Among the patents recently obtained through Dewy & Co.'s Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

ATTACHMENT FOR PLANING MACHINES.—A. S. Hewlett, Sebastopol, Cal. This invention relates to a device which is called a chip-breaker, which is intended to be secured upon planing machines in such a manner as to press upon the board or stick which is being planed, and prevent it from gouging or chipping up when the planing bits are cutting across or against the grain of the wood. It is intended to be used more particularly where the edges of boards are to be planed to match each other, as in rustic and other similar work, and consists of a presser-foot with suitably attached mechanism, so that it is caused to press on the wood just in front of the cutters in such a manner as to compel them to make a clean cut.

CAR COUPLING.—H. H. Morgan and A. Geary, San Francisco. This invention consists of an automatic coupling device and also of a suitable mechanism for uncoupling the cars without the danger incurred by going between them. Two bumpers are secured to the ordinary car timbers, each consisting of two parallel stationary jaws, the outside one of each having a flaring extremity in order to guide the opposite or interlocking jaws when the cars come together. After being connected, the jaws are secured by a pin passing through a slot which allows vertical motion. An arm is attached to a rotating shaft and connected to the pin, so that by rotating the shaft, the pin can be withdrawn. The upper end of the shaft is bent at right angles so as to stand across the opening between the jaws, and a tripping bar is fixed to the upper corner of the entering jaw. This bar strikes the end of the shaft and draws the bolt or pin, so as to allow the jaws to interlock, after which a spring throws the pin into place. The pin or bolt is long enough to be withdrawn from the corner of the car without going between them, and is held back by a notch until the cars are uncoupled.

NOZZLE.—Thomas Watson, Nevada, Cal. The object of this invention is to provide a nozzle or pipe principally for hydraulic gold washing, in which the difficulty encountered by the twisting and spraying of the stream as it leaves the nozzle, is overcome without the use of the radial plates which are commonly employed. To do this the pipe is constructed with two conically shaped sections placed base to base within the length of the pipe, so that an enlarged chamber is formed, and within this the different currents are corrected and delivered from the nozzle straight and in a solid body.

LAMP BRACKET OR SUPPORT.—Henry Campbell, San Francisco, Cal. This invention consists of a combination of straight and curved arms, one being vertical and serving as a standard which fits into a socket in a table or sewing machine so that the outer end of the bracket may be turned about it over a considerable radius. The outer end of the bracket has a suitable clamp for holding a lamp and this throws light on the work in various positions.

BAGATELLE GAME AND APPARATUS.—Wm. Evers, San Francisco, Cal. This invention relates to certain improvements in the game of bagatelle, and the table used for the purpose, and consists in constructing the table with a sheet-metal surface to prevent wear and present a smooth surface for the top to spin upon. Triangular boxes are constructed in the corners of the compartments of the table, and slides are held in these boxes so that if the top strikes a peg in front of the box the slide will be released and spring up so as to exhibit a number which counts for the player towards the game. The periphery of the top is made of an elastic substance to prevent injury to the sides of the table, and to cause the top to rebound after striking.

MECHANICAL PROGRESS.

Burnt Iron and Burnt Steel.

An English chemist, says the *Yale Courant*, W. Mattieu Williams, has recently made a series of experiments to ascertain the condition which is induced in iron and steel by overheating, and which is technically called "burning." Burnt iron is brittle, has a short fracture, is crystalline, and is devoid of the fibrous structure and silky lustre of good iron. Mr. Williams finds that iron in this condition contains, diffused through it, small particles of black oxide. Hence, to test the question, often important in practice, whether a given sample of iron is burnt, he places about a decigram in a test-tube, and pours upon it three cubic centimeters of nitric acid of sp. gr. 1.20. If the iron is burnt, these particles of black oxide are at first left undissolved, and, appearing in the liquid, render it dark and turbid. Their subsequent solution distinguishes them from the carbon which may also be present in the sample.

Mr. Williams believes that the function of the small quantity of carbon always contained in good wrought iron is to prevent this burning. When this carbon is removed, the iron partially oxidizes throughout as soon as heated, and becomes "burnt." Hence the impossibility of making merchantable iron by the Bessemer process, the iron, at this high temperature, beginning to oxidize even when the carbon present is as much as 0.25 per cent. The Bessemer product is steel therefore, and contains 0.28 per cent. of carbon.

Iron has its maximum toughness when the carbon is lowest. The skill of the blacksmith is shown therefore in exactly touching, in his work, the point at which the oxidation of the carbon ceases and that of the iron begins, without passing it; thus attaining the best result.

Steel, on the other hand, when "burnt," is brittle, can no longer be tempered, and cannot be used until it has been raised to a welding heat, rolled or hammered, and gradually cooled. Its fracture is coarse and granular, the facets of the grains being conchoidal, by which the burnt condition may often be practically distinguished. Mr. W. finds that when steel is heated, the carbon in it rapidly oxidizes, even throughout the mass. He explains "burnt" steel to be steel in which, by suddenly solidifying it when in a viscous condition, carbonic oxide evolved by the oxidation of carbon, is imprisoned. By slower cooling this carbonic oxide would have been expelled; hence the cavities or "toad's eyes" in the steel; which may be removed by welding, which operation, as above stated, restores the steel.

"Burnt iron" and "burnt steel," therefore, both owe their rottenness to intermingled particles of combustion-products; coming in the latter case, from the carbon; and in the former, from the iron itself.

NEW INSTRUMENT FOR MEASURING SPEED AT SEA.—The difficulties hitherto experienced in measuring the speed of ships, by any of the devices thus far produced, are said to be overcome by an ingenious instrument called the rhysimeter, lately invented in England. The indicator, which resembles a barometer in size and appearance, is located in the captain's cabin, a column of mercury showing constantly by its variations the speed which the vessel is making. Its accuracy is said to be perfect, there being no appreciable interference by friction or otherwise; and as the machine is self-registering, it may be made to keep a complete record of the speed of the ship throughout the voyage. The log and all substitutes for it heretofore employed have been found unreliable, especially in changeable weather, or under a heavy sea in either direction.

The rhysimeter is also designed for indicating the velocity of flowing liquids, which is in fact one of its most valuable uses, as it will greatly assist in the solution of many problems in practical hydraulics.—*Ec.*

NOTCHING RAILS.—The officers of several German railways have again reported on the necessity of notching the bottom flanges of rails, and it is stated by one railway company that on a line laid with cast steel rails without notched bases, a dangerous longitudinal shifting of the rails occurred. Generally, however, the practice is not found injurious, though it is thought preferable to have it done at the ends of the rails only, the corners of the notch to be carefully rounded off in all cases.

Dovetailing Machine.

A mechanic in Chemnitz, Prussia, has invented a most ingenious machine for dovetailing. It is described as having three revolving cutters, of a form corresponding to that of the dovetail recess to be made, and which operate to cut simultaneously three recesses in the edge of the wood. The wood itself is placed on a horizontal table, and moved downward before the cutters by means of a vertical slide to which the table is fixed. The three cuts being completed, the slide has a horizontal motion sufficiently large to bring a fresh portion of the wood before the cutters, when the operation is repeated. For cutting the counterpart of these dovetails, the same machine is employed, with plain revolving disks or cutters, the table being then placed in an inclined position, so that the vertical slide, in carrying the wood against the cutter, produces a parallel cut inclined in one direction, and at a second operation, for which the table is placed in an opposite inclination, the second bevel is produced. The advantages of a machine for this purpose thus constructed and operated are at once apparent.

A NEW ENAMEL.—M. Pleischl, of Vienna, claims to have discovered a vitreous enamel for metals which combines the properties of durability, freedom from noxious ingredients and malleability by contact with the substances to which it is applied, and he has lately exhibited some specimens of enamel work which have elicited high commendation. Among these were plates of copper, the coating of which bore exposure to heat and resisted the action of acids, possessing also the important property of allowing the plate to be bent to an acute angle without either scaling or cracking. This enamel is free from lead or zinc. It is not liable, therefore, to the serious objections to lead glazes, of contaminating liquids contained in the vessels coated with it with poisonous salts. It also bears very rough treatment, endures a hard scratching with a knife without losing its polish or showing any trace of the implement, and, though treated to any degree, even to redness, it continues to be perfectly sound, the only precaution necessary to be taken being not to cool it suddenly by contact with water. It is harder than glass, which it scratches, and is not even scratched or marred in the slightest degree by the most thorough scouring with sand.

THE LARGEST PIECE OF FORGING.—The Bridgewater, Mass., forge has contracted with the Pacific Mail Steamship Company to furnish a new shaft for the steamer *Japan*, to weigh 45 tons—the largest forging of its kind in the world. It is to be of the best fagoted charcoal iron, to stand the test of 70,000 pounds to the square inch, and will be shipped to China.

ORANGE SEED.—The proprietor of the *Visalia Delta* has been amusing himself in a strange way, and yet one that may well be imitated; to his patrons he says: We have purchased for free distribution among our subscribers a few pounds of Tahiti orange, lemon, and lime seeds, which can be had on application at our office. The object is to induce the planting of these seeds in various localities as an experiment to test more fully than has yet been done the cultivation of these fruits, to which we believe the climate and soil of this section perfectly adapted. We have also a small quantity of Australian blue gum tree seed, to distribute for the same purpose, in the firm belief that if the plants are properly set out on our plains at the commencement of the wet season, and properly protected from the ravages of stock, they will survive the driest season without irrigation. They flourish in Australia, where water is rarely had at a less depth than 100 feet. A tree of this variety only a few months old set by ourselves on a hillside in San Francisco withstood the last dry season without irrigation, though much mutilated by the ravages of goats. They are a tree of rapid growth, an evergreen, cleanly shrub, the leaves of which bear an aroma much like the leaf of the bay tree.

A REMARKABLE CANINE.—A New York paper tells of a cat, that every morning wipes his paws upon the hall mat before entering his mistress's bedroom. If his feet leave a mark on the white coverlet of the bed, he is told of the fact, and again resorts to the mat, and then if not satisfied that his paws are clean, he dries them by the stove.

SCIENTIFIC PROGRESS.

Oxalic Acid and Plants.

The frequent reference in agricultural and other journals to oxalic acid as a constituent of plants has awakened considerable inquiry regarding the history and nature of the substance. The eminent Swedish chemist, Scheele, first discovered the acid, having found it in the juice of the common sorrel, where it exists as a binoxalate of potash. It is generally known under the name of "salt of sorrel," and is very sour to the taste, and poisonous when taken internally.

The crystals, in form and color, so closely resemble those of the sulphate of magnesia (Epsom Salts) that they have often been mistaken for them, and fatal cases of poisoning have resulted from the error. The name, oxalic acid, is derived from the Latin name of the common wood sorrel, *Oxalis acetosella*. The field sorrel, so plenty and so troublesome to farmers, belongs to an entirely different family of plants, the *Rumex acetosella*, and is classified among the docks. This contains considerable of the acid, as also do the lichens, in which it exists as oxalate of lime.

Oxalic acid is the most highly oxidized of all carbon compounds, with the one exception of carbonic acid. It belongs low down in the list of organized products, and may well be regarded as constituting the last stage in the oxidation of carbonaceous substances before they pass into the dead, inorganic condition of carbonic acid. In plants, it seems to be more the product of decay than of growth. In lichens, especially, this would appear to be true, as the oxalate of lime found in them forms nearly thirty-five per cent. of the weight of the plant, and it exists in them in its most insoluble form.

In garden rhubarb, the acid is found locked up with lime, and it is a significant fact that it is more abundant in old, than in the new plants. We incline, so far as its connection with plants is concerned, to class it with lignin and some other bodies—a material which the plant has no further use for, and therefore deposits in the cells in an insoluble condition. All the vegetable acids are inactive agents in plant organisms. They do not appear to perform any leading part in vegetation, and in all their physical and chemical relations are widely different from the active soluble salts and other bodies which are found dissolved in the sap.

Its Artificial Production.

Oxalic acid can be produced artificially with great facility, and it is manufactured and employed in the arts in large amounts. It is curious that in sawdust, an utterly waste product, we have a material from which this acid can be produced to any extent, and nearly all of the substance found in the market is now made from sawdust. The sawdust is placed in large vats and moistened with a lye made of caustic soda and potassa. It is then taken out and dried on plates of iron, and the dry mass is washed with warm water to dissolve out everything except the sparingly soluble oxalate of soda. The mother liquors are evaporated to dryness and ignited, to save the potassa, which is used over again. The oxalate of soda is decomposed by boiling with caustic lime; the soda enters into solution and may also be used over again. The oxalate of lime in turn is decomposed by sulphuric acid, and the liquor decanted from the insoluble sulphate of lime, which upon concentration yields crystals of oxalic acid.

This is a brief, imperfect description of an interesting chemical process, and serves to illustrate how science triumphs over obstacles, and produces substances peculiar to vegetables from waste materials. The cost of production is very small, not exceeding a few cents a pound, and if the acid would act upon feldspar, and liberate the potash it contains, as some suppose, its employment might supply a cheap method of procuring this most valuable plant food. But this idea is erroneous, as we have endeavored to show in some former statements.

If the acid is at any time swallowed by mistake, an antidote to the poison is found in any substance containing carbonate of lime, or caustic lime; as such, when brought into its presence, convert it into insoluble oxalate of lime, a substance which is harmless. Chalk, whiting, or plaster from the walls of a room, will serve a good purpose, and either one of these in quantity equal to the amount of acid taken, should be stirred in water and drunk as speedily as possible.—*Journal of Chemistry.*

Another Achievement of the Spectroscope.

A new and another most wonderful achievement of that remarkable instrument, the spectroscope, has just been announced by a German astronomer—Dr. Vogel, who has successfully applied this instrument to the measurement of the sun's rotation. The form of instrument used by him was that known as a reversion spectroscope. As originally constructed, it consisted of two direct vision prisms, with their refracting angles facing opposite ways. Hence a beam of light falling upon them produces two spectra, one of which has the colors above the other, and in an inverse order. The object-glass being divided horizontally, and each half being movable micrometrically, it is possible not only to juxtapose, but even to superpose the spectra, and to measure the distances of the lines with great accuracy.

The instrument was devised for the purpose of measuring the direction and velocity of astronomical motions, one of the problems proposed by the inventor being the very one now solved by Dr. Vogel. If the two spectra in the instrument represent, as they may be made to do, different and opposite limbs of the sun, then, since one is approaching us and the other is receding from us, there ought to be a difference in the position of certain spectrum lines. The difference in velocity is about a mile per second; an amount which Zöllner says ought to change the position of the sodium lines by a quantity equal to 1-80th of the distance between them.

With his instrument as originally constructed, he was unable to observe any displacement; but with a more powerful instrument, consisting of a circular train of five highly dispersive prisms thus arranged, which he furnished at Kiel, Dr. Vogel has been able to detect a displacement of the fine line F of the solar spectrum, by an amount which gives a velocity of rotation of 2 miles per second. Subsequent observations, made with more care and with a higher dispersive power, have reduced this number to 1.52 miles per second. This is only 1.28 miles more than the velocity given by Carrington's observations on the spots, which was 1.24 miles per second; an approximation which is remarkable.

PATINA OF BRONZE.—The term "patina" is used to designate a beautiful greenish coating which forms naturally upon the surface of bronze, under the influence of air and moisture; consisting in most cases of a carbonate of copper which adheres very closely, and not only imparts a beautiful appearance to the metal, but also protects it from further oxidation. The formation of this patina proceeds with varying degrees of rapidity in different localities. In some places, especially in large cities where coal is burned in considerable quantity, it does not develop itself, the metal assuming the appearance rather, of a dirty cast iron.

The difference in this respect has received the attention of a scientific body in Prussia, under the direction of which, numerous experiments have been made; and it has been ascertained that the formation of a good patina was not dependent upon the composition of the bronze, although the time required for this development may have something to do with the percentage of the different ingredients. It was furthermore discovered that by occasionally washing articles of bronze, exposed to the atmosphere, applying oil, and afterwards rubbing off with a soft rag all of this that could be removed, in the course of a few years a patina of the finest quality is developed irrespective of the location; and in this way the desired result can be, and actually has been produced on objects that had long refused to put on this desired exterior.—*Yale Courant.*

SUBSTITUTE FOR LITHOGRAPHIC STONE.—It is now proposed, but with doubtful promise, to substitute ordinary lithographic stone by the use of a smooth block of wood coated with glue or other gelatinous matter, or with a solution of silicate of soda and bichromate of potash, exposed to sunlight and washed. An ink or pigment is made with gelatinous matter dissolved in a saturated solution of bichromate of potash, with or without chrome, alum, and with a small quantity of ivory-black to render the ink visible. On the prepared block or slab the desired picture or other work is made with this ink, and when dry, exposed to sunlight. After exposure, the surface is covered with gum or glycerine, and is then ready for the printer.—*American Artizan.*

HOME AND FARM.

Farm House Chat.

BY MARY MOUNTAIN.

To pick up broken threads of chat is an awkward task, but the subject uppermost in my mind "when the long silence fell," has been pleasantly revived by the pretty designs for farm houses in the *RURALS* of Oct. 14th and Dec. 9th. I hope many a farmer gave them a friendly glance and a knowing wink, as much as to say—"yes, yes—when crops come in big, or when this mortgage is lifted, then we will see what can be done." And many a farmer's wife walked "fancy free" through every room—"up stairs down stairs and in my lady's chamber"—making various alterations to suit her own special air-castle, and bringing up with a big sigh as she wonders, "will it ever be my good fortune to have a home so pleasant as that?" Perhaps she looks out upon hundreds of acres spreading so far that the team and workmen are hardly visible in the dim distance, and the old homesick spasm comes back. "O if it were only a little farm—cozy and neat like the old home! But a great, desolate, sprawling "ranch!" so lonely—so far from everything! No sabbath bell—no kindly social influence near and comforting! How can a man like it? How can a woman bear it?"

We can easily understand how a man can like it if he has business ability to manage a "big thing"—or even if he thinks he has, and will never allow bad luck (?) to prove the contrary.

How a woman of average culture and de-eided social tastes is to bear it I cannot see, unless her husband be willing and prompt to help her in solving the problem. Shall I tell him how? Make the home just as bright and pretty as it can be made and never say that this, that or the other ugly and inconvenient arrangement is "good enough for a ranch." (The very word "ranch" has a demoralizing effect upon even live Yankees straight from the land of industry, economy and fair results. So look out.)

If you have a grand, noble farm, try to feel like a king and treat your wife like a queen, or as "equal partner" in all these fair possessions. Because she is a farmers wife must she forfeit forever her right to love beautiful things, to wish for them, to have them around her? Doubtless she has a sore spot in her heart from wishing so often and vainly that you were a lawyer, a doctor, an editor—anything or anybody who would perforce estimate truly the value of a refined, beautiful home, such as makes a woman proud to be joint owner."

Now if you are a farmer at all you ought to be such a thoroughly good one that you can be proud of your calling and make your wife proud of it too. If she has an eye for fine stock, fancy chickens, good fences, and gates that swing like a top—why all the better, and how you will enjoy them together.

But unless she was wretchedly brought up you may be sure she has an eye and a heart too for cheerful rooms, handsome pictures, nice, pretty things in her bedroom, and as for the kitchen—neat, spacious, ornamental, as well as useful—well—just mark her proud eye when "company" exclaims—"O my! what a beautiful kitchen! it would be just fun to work in such a bright, handy place."

And now having arrived at the beau ideal kitchen, I want to tell all about it, but first will give one more practical hint to king farmers. If he has not already done so let him in a jolly way assure the "queen consort" that a gentle horse or horses and a comfortable carriage shall be often and most cheerfully at her disposal for making trips to town, or visits to the distant neighbors. Big ranches have no near neighbors. By this time she has quite lost sight of the old puzzle "how can a woman bear it?" and she would not exchange plain, jolly Hezekiah for the grandest merchant prince that ever waited for ships to come in.

As for gratitude, well, in this progressive age she is perfectly aware that all these good things are hers "by right," yet if she is the true, large-hearted woman she ought to be, there will now be a joyous flow of gratitude—best thing in the world to promote harmonious working of domestic machinery and various sorts of happiness for all concerned. Sure now that this contented woman will train up her children to enjoy and love country life, we will leave her after one more peep at her kitchen.

It is in an "L" high-posted, and with

nice large windows looking toward sunrise and sunset. These eastern windows and a door open upon a wide, high porch furnished with a wooden settee, a few rustic chairs and a box-seat whose open lid discloses a retreat for boots and slippers. Here also is a hanging shelf, or neat box to catch the book, papers, or work that occupies the spare moments out in the sweet pure air. Here is plenty of room for the little ones to build play-houses and have good times when winter rains have made the earth all cold and damp. Along the stout pillars, hooks can be fastened and a clothes line put up when the storms forbid the drying at the usual place; and here at the far end are steps leading into the woodshed. Flowers blossom along the front, but are not allowed to keep out sunshine. Returning to the kitchen, this door on the right opens into the family sitting-room or parlor—why should we not sit in the parlor and enjoy the pretty things all the time?

At the other end of the kitchen are two doors, one opens into a wash-room (may also be used as a bath-room) with unlimited cleansing capacity and discharge pipes sufficient to accommodate all the suds of "Blue Monday." Here is a second best cook-stove, often so handy in doing odd jobs and to use when comfort demands a cool kitchen, where the presence of a dining table betrays the usual custom of farmers "to eat in the kitchen."

This will shock the "Aesthetics," but let them remember how tired is the house-mother and what a saving of steps is made by this arrangement. Passing around the handsome cook-stove that shines as brightly as Mr. Aesthetics best boots, we stop just beyond a door that seems surrounded with cunning devices; ample drawers opening kitchenward containing table linen, towels, etc.; a sliding panel into the dish-cupboard; a swinging panel that comes down and forms a side-table supplementing an inner broad shelf that connects with the sink. Along this way dishes from the table go in to be washed and goodies for the oven come out to be baked and go back to cool off.

Stepping inside we find a large store-room or pantry, containing dish-closet, sink, shelves, moulding-table, barrels, boxes, cans, jars,—all the utensils and tools necessary to the high art and science of domestic cookery, and a door in one corner leads to a cool, neat cellar below. A wire screen guards the window that is easily raised and lowered for ventilation. Of course there is plenty of water and everything arranged to make work easy and pleasant.

In the kitchen again we see a suspicious knob behind the stove and turning it, down drops the pretty painted panel and behold! the hugest wood-box that ever was seen, with a special corner for kindlings. Peeping through we see that a man splitting wood in the shed can toss the sticks directly into this great box. Shutting it again we take time to notice the bright pictures on the walls, the lounge in the corner, the neat, oiled floor, and there are some stout hooks for Hezekiah's dressing gown, hat or whatever he likes to hang thereupon. Of course there is a closet not far off for all sorts of garments; but a man likes to have his things handy and this is one of his "rights" in the pretty new house. * * It is fatal to some women to have a new house. It becomes to them a sacred temple, never to be profaned by too careless or common usage.

Samuel and the boys are made to understand that dirty boots have a most unwelcome sound and are somehow connected with the total depravity inherited by "meu-folks." They enter the shining temple with sheepish or defiant looks and fling their hats upon the floor—well knowing that coat or hat left unguarded will be hustled into some remote hiding place. No book or paper is allowed to "lie around handily," for this style of house-mother "cannot bear a clutter" and allows her bump of order to over-shadow the household and blight the comfort and happiness that might grow there. But samples of this style are quite rare in California, where, let us hope, the pretty farm homes will soon be the rule and not as now, the exception.

Among the new irrigation enterprises is one to supply Ventura, in Santa Barbara county, by a ditch ten feet wide, three feet deep and four miles long, from the Santa Clara river at Santa Paula. The area of arable land, now dry, that may be irrigated from the ditch is 10,000 acres.

CALIFORNIA boasts the largest orchard in the world. It contains 426 acres, and over 75,000 fruit trees.

Whey for Animal Food.

This article of food, which is now so largely increasing, through the multiplication of cheese factories, has given much trouble to many farmers who do not understand the true method of using it. Whey is not a perfect food in itself, as it contains only a part of the constituents necessary to support animal life and health. It is composed nearly all of milk and sugar, retaining but a slight proportion of casein, or cheese and butter. But there are many other partial foods which are highly prized for feeding purposes. Whey has about the same composition as the turnip; and even this, alone, is quite sufficient food for an animal.

Mix whey with some highly nitrogenous food; such as oil meal, pea meal, oat meal, or bran, and it becomes a profitable food for cows, hogs or young animals. One pound of oil or pea meal, or 1½ pounds of oat meal or bran to three gallons of whey, will make it a well-balanced food for the production of milk, or the growing of the young animal.

The constituents of whey have the advantage over the same elements in vegetable food, of being more soluble, and therefore, more easily digested and assimilated. Liebig, and some other eminent physiologists, have supposed that starch is changed into sugar in the process of digestion, and in this form, is absorbed into the system. If this theory be well founded, then whey is in the proper condition for absorption, and its elements would point it out as a highly fattening food; its elements being, chemically, the same as fat or butter. There have been numerous cases where hogs have been made very fat on whey, with a small portion of nitrogenous food, which proves that its office is to produce heat, oil or fat in the system. Experiments in feeding whey to cows, calves or hogs, show that it has worth from eight to ten dollars per cow for the season.

But whey as obtained from the factory is generally sour; and to obviate this difficulty many have resorted to heating or boiling it. It ought to be cooked with other food—oil, pea meal, bran, etc. This is easily done by steam. Put the whey and other food into a barrel, and introduce the steam pipe at the bottom of the barrel.

Steaming is much better than boiling in a kettle, as there is no necessity of stirring, and no danger of burning. The cooking stops fermentation, and enables the feeder to keep the whey until it can be fed. Mr. Harris Lewis, a large and intelligent dairyman of Herkimer County, N. Y., has adopted this system of cooking the whey, and recommends it highly.

The practice of taking whey from cheese factories at some little distance, has some objections over the course pursued by some stock company factories, who furnish the hogs and feed it out at the factory as fast as produced. All the latter method lacks to insure success is the proper preparation of the whey, as above set forth, the convenience of good pasture near by, and better care of the hogs.

\$50,000,000 Annually Wasted.

The U. S. Agricultural Report of 1865, page 407, says:

If we take the amount of grain and Indian corn raised in the United States, as by the census of 1850, we shall find, by allowing forty bushels of grain to the ton of straw or corn fodder, that there were about 30,000,000 of tons. Now, at least, one-third of this is wasted for every purpose except manure, and vast quantities are not even used for that. Suppose we estimate this at one-half the value put upon it by Mr. Mechi, or five dollars per ton, and we have the enormous sum of 50,000,000 wasted, for want of proper economy, in a single year. We believe this estimate much below the real loss. These facts are worthy of a thorough examination by the farmers of the whole country. Let them study their own interests. Many of them will see where they have thrown away enough in ten years to double their property.

Culture of the Cranberry.

The soil best adapted is low, moist land, suitably drained, so that water will be ten or twelve inches under the surface. As the plant draws nourishment from air and water only, it is not of consequence how poor the soil may be. Light soil, or that destitute of organic matter, is better for their growth; hence, if the ground is covered with much bog or peat, it would be of great service to remove the top of the ground to a compost heap, and cover the remaining soil with sand to the depth of

five inches or more. If planted directly on muck or rich soil, they make too rank growth, sometimes ten or twelve feet in length, and cover the ground over with a mat three or four inches thick, and as the fruit grows on the ends of the shoots, the rank growth throws out but few buds; but if sanded over, or growing on a natural, deep sandy bed, the shoots are of short growth, and the plants throw out more and stronger fruit-buds. They will grow on moderately damp sandy soil, that can be plowed or cultivated, or in a similar garden soil not too dry, and produces a fair crop on such land; but will not do well on dry sand or clay. Overflowing is desirable, and I might say almost indispensable late in the fall. It is non-essential as to the depth of water over them. It can be let off again from the 1st to the 10th of May. If it can be done, it is desirable to have the flow so regulated that it can be let off or on in the course of a few hours; so that, in case of drouth or attack of the worm, it can be let on for a short time; it should be used also in the fall while gathering the fruit, for a frost may seriously injure it for market. In prospect of any danger, the water can be let on until it is past; or if it is desirable to keep the fruit over the winter, the berries can be left on the vines until spring, when they will be as fresh as if gathered in the fall.

There are three varieties—the cherry, bugle, and bell—generally cultivated. The large round cherry is a late, not prolific bearer and does best on quite damp sand. The bugle is quite handsome, not as late as the cherry, and not as prolific as the bell, which is the most generally planted. It is early and prolific, and is the kind usually sold as Cape Cod cranberries. It is also the kind sold by some dealers as upland.

Sacramento Farmers' Club.

This club met pursuant to adjournment on Saturday last. The Committee on Road Laws appointed at last meeting reported through the Chairman, J. R. Johnston. The report was read and adopted. Assemblyman Johnston stated that this brought up the subject of our State road laws, which he believed to be a very improper system, inasmuch as every able-bodied man under the age of fifty, as the law now stands, is required to pay the sum of \$4 poll tax, the Road Overseer collecting the same and deducting fifteen per cent. of the amount for collection. The money is paid into the county treasury and divided up between the different road districts, and the money so divided is returned to the Overseer upon his filing his accounts with the Supervisors. The general opinion of the farmers present seemed to be that our road laws should be so amended as to allow the farmers to work out their road tax rather than to require them to pay the cash. The matter was referred to the same Committee, with instructions to bring in a bill at the next meeting embodying this sentiment.

Our Fruit Culture.

Essays on the subject of fruit culture were read by C. W. Reed and C. W. Holt. S. R. Johnson handed in a fine specimen of an apple of the Esopus Spitzenburg variety, from Butte county; it was his opinion that the same variety could be raised with equal success in this county. E. F. Aiken stated as his experience that the Bartlett and Flemish Beauty pears were possessed of good shipping qualities. Wm. M. Haynie thought much more attention should be given to producing seedlings, stating that many seedlings produced a finer flavored fruit than graftings, and then it would pay nurserymen to give it their attention. Mr. Greenlaw proposed that the club soon take steps to establish a cabinet of fruits, with a view of collecting California fruits, particularly seedlings. Mr. Reed thought this the most desirable and valuable proposition that had been brought before the club. The matter was deferred for further thought and maturity of plan. Mr. Rutter was invited to read at the meeting one week from next Saturday an essay upon fruit culture on the red lands. The subject of beet sugar culture was selected for discussion at the next meeting, and William J. Haynie was appointed to read an essay on the subject. On motion of Johnson, the Secretary was instructed to purchase the bound volumes of the *RURAL PRESS* and have the same lettered as the property of the Club. The Club adjourned to meet at the same place next Saturday at 1 o'clock P. M.

THE Chicago Journal considers the destruction of about a car-load of "original poetry" in its office as the most gratifying feature of the fire.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY—*Gazette*, Jan. 25: NEAT INVENTION.—Mr. McGraw, of this place, yesterday showed us a unique arrangement for fastening the covers on fruit boxes that does away entirely with the use of nails and screws. It consists of a wooden bolt about an inch longer than the box cover on the under side of which it is fastened. This bolt moves back and forth and when the cover is shut down is held in place by a spiral spring. In each end of the box is a hole into which the bolt fits. These holes are covered with tin, and in one end is a small hole into which a common nail may be inserted and the bolt pushed back and the cover raised. Mr. McGraw will apply for a patent for his invention, and in the meantime he is prepared to furnish bolts to all who may desire them. The bolt can readily be attached to any box-cover.

RAMIE.—Assemblyman Crane introduced a bill in the Lower House, yesterday, for the encouragement of the production of ramie.

FARMERS' PROSPECTS.—An exchange states that all along the line of the Western Pacific Railroad farmers are busily engaged in preparing their ground for seeding. The drouth stricken strip of country along the San Joaquin river was mostly summer-fallowed, and the grain now looks finely. The soil in that region is such that it can be plowed at any season of the year, and as a large breadth of land has been sown, the farmers there will be likely to retrieve their losses by the drouth during the last two seasons. Along the cattle ranges in the San Joaquin bottom, can be seen the skinned carcasses of many cattle that succumbed to the rigors of the storms and the inconvenience of short rations.

CONTRA COSTA—*Transcript*, Jan. 27: The grass in many places has attained a sufficient height for cattle to nibble, and from Brooklyn to Alameda, droves often are already quietly grazing. Farmers tell us, that the prospects were never better than at present, both for stock and farm. Thousands of acres are put in this year, where no longer ago than last season it could be bought cheap. The farmers noted it down as worth less, and it passed as such, but *presto*, what a change—everything in an agricultural sense is coming up. The vineyards are being put in order; the nursery is receiving the kind care of the owner, the garden and flowers by the gardener, the orchard trees trimmed ready for the annual load of golden fruit, the farm resplendent with the tender blades of green and the pasture grounds are open and will have upon them the moving panorama of animal life. Let us rejoice at these prospects coming up as they are on every hand and greeting us—return unmeasured thanks to the Dispenser of all good.

COAL.—Yesterday a man came into the city with specimens of coal which he says came from off his ranch in this county. He refuses to state the locality where it was found or give his name. The coal was tried and found to burn free, and emitting but little smoke. It is of an anthracite quality, and valuable. He was digging a trench when he came upon the vein, and trying it, found that he had struck good coal. He says the vein widens as it goes down. It is certainly a valuable discovery.

CALIFORNIA CANARIES.—These feathery songsters are now commencing to make the oaks their habitation. Our boys catch them in a singular way; they have a bird which they term a "caller," which they place in a cage or trap. In the first apartment where the caller is confined is placed feed; as soon as it begins to chirp, the canaries will hover around and go into the second apartment where a trap will be sprung and they are in with the caller. There are different methods of fixing these traps or cages, but this one we have described is the most preferred. It will soon be the season for them, and our boys look forward with delight, as in a pecuniary point of view it is a success.

FRESNO—*Expositor*, Jan 24: From every section of the country with which we have had communication, we learn that the crops are looking finely, and the farmers are greatly encouraged at the prospect. The weather during the past week has been favorable to the growing crops. Many farmers are still plowing and planting, feeling assured that if there is not a sufficient quantity of late rains to insure full crops, there will still be enough to

make hay, and that commodity always brings a good price in this section of the country.

LOS ANGELES—*Star*, Jan. 24: The first English walnuts were planted in Los Angeles county in 1857. They commenced bearing in three years, the crop increasing every year. In the year 1863 the crop amounted to 9,200 pounds. Previous to 1860 the walnuts used in California were all imported from China and Chili, to the amount of 30,000 pounds annually. The flavor of the Los Angeles walnuts is finer than that of the imported nuts. Near San Gabriel Mission, the walnut tree is found of a larger size and bearing the best of nuts. These trees were set out by the missionaries. Los Angeles county supplies a large demand for walnuts, and as Southern California becomes more settled, walnut trees will be grown more extensively, adding an increased source of wealth to this delightful portion of our State.

Last night (26) was the coldest of the season. Some damage was done to young orange trees; ice formed in gutters and water pipes, and froze them up. Thermometer at 8 A. M. to day, 41°

MONTEREY.—*Democrat*, January 27: There will be an immense quantity of land seeded this season in this county, farmers straining every nerve to make up for deficiencies during the past two years. The two weeks just gone by have been dry and eminently favorable to farming operations, more land being seeded than in the same space of time during any former year.

Argus, Jan. 27: Farmers are busy plowing, and seeding is actively going on, and, as a consequence, there is at present little business stir.

NAPA—*Reporter*, Jan. 22: The farmers throughout the Valley are busily engaged plowing and sowing. A great portion of the land along the foot-hills is in excellent condition for plowing. The grain sown before the late rain looks green and flourishing. Farmers, except those who failed to sell last year's crops before the late rains, are in fine spirits. Vine-growers are busy pruning. Large numbers of vines will be planted during the winter. It is too early to make any estimate about our fruit crop. The trees are being pruned, and fruit growers say the prospects for a large crop are good. About St. Helena, the buds are swelling, and a few weeks of fair weather will make them burst. This is especially true of the almonds. A few parties last winter commenced the experiment of raising the mulberry. Their most sanguine expectations have been realized. There will probably be large numbers planted the coming season. The soil and climate of the upper portion of the valley seems eminently adapted to the mulberry.

NEVADA—*Republican*, Jan. 27: Farmers in the lower portions of the county are actively at work plowing and sowing for hay and grain. Some are sowing wheat and barley, but the majority of our farmers this year are putting in rye and oats, for hay purposes. Nevada county will produce more hay and grain this year than any previous year. Our farmers ought to furnish all the hay, flour and grain consumed in the county.

PLACER—*Stars and Stripes*, Jan. 19: PLACER COUNTY COTTON.—J. D. B. Cook, an "honest farmer" who resides near Lincoln, has placed on our table a cotton plant twig bearing three large bolls of fine cotton, which with a sufficient quantity to pack the eggs for a season, was grown without special cultivation or attention, on his Placer County farm. Southerners who claim to be judges have pronounced this specimen a superior quality of cotton, and Mr. Cook is sanguine that this staple can be successfully and profitably grown throughout the lower end of our county.

SACRAMENTO—*Telegraph*, Jan. 25th: At B. N. Bugbey's vineyard, on Tuesday last, a dance took place in one of his mammoth wine tanks. A large party of ladies and gentlemen, invited to the dedicatory ceremony of dancing in one of the largest vats in the United States, were in attendance, and participated in the hospitality of one of the most enterprising vintners in California. The monster tank was lit up; the musicians announced "take your partners for a quadrille," and dancing commenced after the old Bavarian style—while one set danced, there was plenty of room for 20 spectators and the musicians. The vats are able to contain 50,000 gallons of wine.

SACRAMENTO *Record*, Jan. 25th: The fierce north winds have not only completely dispelled the fogs but are fast drying up the roads, wet lands and small sloughs and ponds scattered over the plains.

Owing to the soaking storms of the earlier part of January, the recent dry norther failed to bake the soil, as is too often the case after similar severe blows.

SWAMP LAND OWNERS.—*Reporter*, Jan. 19th: In response to a call issued by Captain William Blanding and others, a large number of owners of and persons interested in swamp and overflowed land, met in the Court room of the District Court yesterday. There appeared to be various opinions entertained as to the object of the meeting, and, in consequence, much irrelevant matter was introduced and discussed, although it was finally settled that the objects in view were: The most feasible way in which the overflowed land could be reclaimed, without detriment to the adjacent dry land, and a provision made to meet the expense of such action as may be taken in the work of reclamation. Judge Heydenfeldt, of San Francisco, was called to the Chair and Grove L. Johnson chosen Secretary. The following resolution, presented by Captain Blanding, was adopted: "Resolved, That a committee be appointed by the Chair to consider and prepare a proper Act for funding the indebtedness of the various reclamation districts to be hereafter formed, and that said committee submit the same to the Legislature in time for action during its present session." A resolution presented by Judge Hastings, for the construction of a canal to relieve the Sacramento river of its surplus water, was withdrawn after an animated discussion.

AGRICULTURAL ENCOURAGEMENT.—Jan. 27: The Committee of Delegates from the several agricultural societies held a meeting yesterday, and after considerable discussion it was agreed to petition the Legislature for the following appropriations: For the State Society \$5,000; for the Bay District Society, \$3,000, and for each of the other district societies \$2,000, for the year 1872, and the same amounts for 1873. During the day a bill was drawn up, providing that each of the societies receiving assistance from the State shall make annual reports to the State Board of Agriculture, and that the State Board shall make annual reports to the Governor, and shall include in such reports the reports from the District Societies, which shall be published annually.

SAN JOAQUIN—*Republican*, Jan. 26: We hear that wheat which was sown before the rain and has since been covered with water is not so seriously damaged as at first supposed. The farmers think very little if any will have to be re-sown. The heavy winds of the past few days have evaporated the water from a great deal of wheat land.

THE COMING CROPS.—We receive the most gratifying accounts of the crop prospects from all parts of our magnificent valley. An immense area has already been seeded in wheat, and it is generally in a healthy and satisfactory condition. Large bodies of land are yet to be put in. It is estimated by persons thoroughly familiar with the subject that the breadth of land in wheat this year in the valley will be from fifteen to twenty per cent. greater than the preceding when it was fully thirty per cent. in excess of any former season. There is no reason to doubt that every acre sown this year will yield a full crop. The present state of the markets of the world, and the probable product of other grain-growing countries give reasonable indication that the California crop this year will command remunerative prices. Under all the circumstances, we may reasonably anticipate a year of unparalleled abundance and prosperity, not only to the agricultural but all other interests.

Stocktonian, January 27: SEEDING.—As an evidence of the universal confidence felt in the propitiousness of the opening season, and the determination of our valley farmers to make the most of it, we may allude to the vast quantities of seed wheat going forward to the interior. On Tuesday and Wednesday of this week alone there were upward of six hundred tons shipped from the wharves of this city to various points up the valley. Of the quantity previously shipped since the commencement of the rainfall, we can make no reliable estimate. It is certain, however, that grain will continue to be sown up to the last moment at which there may be a chance for the crop to mature.

SANTA CLARA.—Jan. 28: Farmers are still too busy plowing and sowing to attend the club in this city, and therefore the meeting yesterday was slim and the business transacted unimportant. Bishops' narrow-gauge horse railroad is now completed from Julian to Santa Clara streets, and the bed for the ties graded nearly to El Dorado street. The work will be completed by March 1st., and will

be a great town improvement. Gardeners and vine growers are busy planting and plowing. The hills are putting on their spring garments and everything looks charming.

SONOMA—*Democrat*, Jan. 24: The recent norther was extraordinarily severe in Vallejo and Petaluma. Large trees on the Sonoma Mountain were torn up by the roots.

TULARE—*Delta*, Jan 18: A. J. Atwell, Esq., last year, to try an experiment with some moist land, put in a large field of corn. He thought the soil would produce a good crop without irrigation, and it did. But after he had raised his corn he couldn't sell it—couldn't sell it at any price. Rather than to lose it he resolved to put it into pork, and the result is the complete pork-packing establishment two blocks east of Mr. A's residence. He has fattened, killed and pickled about ten thousands pounds of pork, and has about as much more fattening. It is quite likely that an important business may grow out of this experiment in corn. A distillery in connection with the present establishment is already talked about.

FARMING IMPLEMENTS.—Farming implements are likely to be scarce during the approaching harvesting season, if we are informed correctly. By the market reports for the past two years we find that very few agricultural tools, particularly harvesting machinery, have been imported to California; the large dealers in those articles in San Francisco, having two years ago a heavy stock left over on their hands, by reason of the drouth and consequent limited demand, this fact, in conjunction with a depression in prices last year, discouraged new orders. The commercial embarrassments of the old house of Treadwell & Co., which had an immense stock on hand, which was put upon the market in the midst of the season, by the assignee, at about 80 per cent. of the cost, caused another serious loss to other holders of this class of goods in San Francisco; as, rather than carry a heavy and unprofitable stock for another season, they sold almost at any sacrifice. This heavy stock of agricultural machinery—which they had to hold over—was one of the principal causes of Treadwell's financial embarrassments; and the season had so far advanced before the red tap of a bankruptcy court allowed goods to be put upon the market, that Brandenstein & Co. (who bought the whole speculation, because it was about half cost) had to hold their threshers, headers and mowers over another year; but the subject has a more serious aspect for our farmers, who have little to do with the profits of commercial speculations, and that is why we allude to the matter now. The coming season promises to be one of the most prosperous for many years for cereals; in short, it will be the great wheat year of this decade. If, then, there is to be a great demand for harvesting machinery of all kinds, and there is not likely to be sufficient to meet that demand, will not the prices go up accordingly. It is possible that the best class of threshers, headers, mowers, and reapers, before Spring may not be found when wanted, for love or money. It would be well for our farmers to look out in time, and be prepared for this possible emergency.

Grape Growers' Association.

The principle business transacted at the meeting on Saturday last was in relation to the "No-fence," question, and the impediments thrown on the successful progress of viniculture by ruinous legislation in the utilization of the waste products of the vineyard—that is, on the distillation of grape brandy.

Judge Hastings, from special committee, reported that in accordance with instructions, the committee had prepared a bill regulating the trespass of stock which had been reported in the Senate, and asked that the committee be discharged. The bill provided for a system of pound under the direction of the Board of Supervisors.

G. B. Crane called the attention of the Association to the importance of keeping our Representatives in Congress, daily informed of the hardships and wants of our California wine-makers, on the subject of the distillation of grape brandy. Under present laws, a large portion of the products of vineyards went to waste, while the wine-maker was kept from making certain descriptions of wine, without incurring the necessity of purchasing spirits.

On motion of I. A. Lockwood, the subject was referred to a special committee, composed of Messrs. G. B. Crane, W. H. Winter, and Chas. King, with instructions to correspond by authority of the Association with our representatives in Congress, with a view to correct the evils complained of.

On motion of G. W. Craig, of Sonoma, the course pursued by Senator Pendegast in relation to the fence question, now pending before the Legislature of the State, meets with the cordial approval of this Association.

Napa City, January 27, 1871.

Agricultural Review.

The State Agricultural Society has issued its biennial report for 1870-'71—a document of so much importance and of such value as a general agricultural review, that we shall reproduce it in the columns of the Press, slightly condensed, but not so much so as to detract materially from the value of the document as a whole. It will be continued through two or three numbers of the Press.

Introduction.

Since the last biennial report California has experienced two successive seasons of unusual drouth. During the rainy season of 1869-'70, the entire rainfall in the central portion of the State was only 13.59 inches, while in 1870-'71 it was but 8.47 inches, making the total rainfall for the two entire seasons a trifle over 22 inches, or two and one-half inches more than fell during the unprecedented dry seasons of 1862-'63, and 1863-'64, and but little more than the average rainfall for each year for the past 22 years.

Notwithstanding these facts, it is a source of congratulation that the agricultural, and indeed all the material interests of the State, have suffered much less during the past two years than they did during the corresponding seasons of 1862-'63, and 1863-'64. Indeed, taking into consideration the progress made in the development of our industries during the past two years, and footing up the results of that progress and of the two years production, we find abundant reason for general congratulation among the people, and for universal gratitude to Him who visits the earth with both rain and sunshine, and who tempers the winds to the shorn lamb.

Lessons of the Drouth of 1863-'64.

These occasional seasons of drouth in California are not without valuable lessons—they are accompanied with benefits as well as disadvantages. In 1863-'64 the general failure of crops throughout all the central portions of the State, and the great scarcity of grazing and hay for stock, directed general attention to the low land constituting the deltas of our great rivers, and also to the high table lands located well up on the Coast Range, and the Sierras. Those who explored in the latter direction found to their surprise and gratification an abundance of the most nutritive grasses, sufficient to feed all the stock then in California during the entire season. They found there countless valleys, waving with excellent bunch grass, and extensive green meadows, furnishing nutritious and plentiful grazing for their flocks and herds, ranging almost to the very summits of the highest Sierras. These extensive high table lands have been the resort of thousands of cattle and sheep every summer since that date, and have been a most valuable addition to the stock raising resources of the State.

Those who turned their steps towards the low tide and swamp lands were scarcely less successful. They found thousands of acres of the most prolific natural meadows of which the world has any history, abounding in wild clover, timothy, and other native grasses. Besides pasturing large numbers of horses, cattle, and sheep during the summer of 1864, it was estimated by this Board at that time, and upon reliable data, that there were cut and secured on these meadows by parties in different portions of the State, not less than 50,000 tons of a very fair article of hay, and that at least 50,000 tons more were left standing upon them uncut.

The lessons taught by the dry seasons of 1863-'64 have not been forgotten by our people. The discoveries then made have been followed up and rendered available and valuable each year since that time, and now the elevated pasture lands of the mountain districts and the broad, natural meadows of the lowlands around about the confluence of the San Joaquin and Sacramento rivers are among the most valuable portions of our State. These two great districts have contributed much during the two past dry seasons to lessen the effects of the drouth which we, without a knowledge of them, would have experienced. Our farmers have also learned the great value of straw in keeping stock through the winter season, and many of them have of late years been seeding down portions of their lands to that most excellent grass, alfalfa, so that we are much better prepared for an extreme dry season in the summer, or an extreme wet and severe one in the winter, than we were a few years since.

Although our official returns show that

we had during the past dry season three times as many acres of land under cultivation in grain and other crops in the State as during the seasons of 1863-'64 more than three times as many head of horses and mules, one third more cattle, and more than eight times as many sheep and goats, yet the losses of stock from the effects of the drouth of the past year were very light compared to the losses sustained in 1864.

These facts show a most gratifying improvement in the condition of our stock raising industries, and at the same time exhibit in a most striking manner the expansive nature and almost unlimited extent of our stock-raising resources when properly understood and husbanded.

Farmers Should Keep More Stock.

While upon this subject, we would urge upon our farmers the great benefits to be derived from a practice of keeping a few head of stock—sheep and cattle—on their farms to eat their grain straw, in preference to burning it, as is still the practice in many portions of the State. This straw, eaten and trampled by the cattle, may be made a source of direct profit to the farmer in furnishing our markets with beef when they are most poorly supplied and when beef commands the highest prices, and also to contribute to the producing qualities and fertility of his soil, which, however rich now, will in a few years of constant cropping and no manuring be reduced to a state of poverty and unproductiveness.

We would also earnestly urge the planting of greater breadths of land in alfalfa, and a more general practice of cutting and securing more hay and other food, such as pumpkins, and beets, and carrots, for feeding stock during the wet seasons. More barns and sheds, also, for the shelter of stock from the severity of storms during these seasons, are needed in all portions of the State, and money invested in this way will never be regretted. We think the experience of many during the present season has been such as to attest the correctness of the above recommendations.

Agricultural Expansion and Improvements.

Not only have we during the past seven years developed stock-raising resources heretofore unknown, and greatly improved the condition of that interest, while we have been adding rapidly to the number of our herds and flocks, but we have made even greater developments and improvements in the general horticultural and agricultural industries of the country. We have expanded, extended, and diversified our agriculture in a most gratifying manner. Had the drouth of 1871 found our agricultural operations confined almost exclusively to the most accessible and easiest cultivated valley lands of the State, as did the drouth of 1864, and had we confined our efforts to the cultivation of the limited number of agricultural products to which our exertions were at that time principally devoted, the condition of our agriculture to-day, and indeed of our industries generally, must have been anything but gratifying. Step by step and year by year we have been learning that California, which we at first supposed was valuable only as a mining State, possesses a greater diversity of superior agricultural and horticultural advantages than any other State in the Union, and we think without boasting we may truly say, than any other equal portion of the earth's surface.

In the earlier years of the State's history the cultivation of the soil was confined to the immediate river bottoms and a few of the commonest vegetables and a little barley constituted the entire list of agricultural products, it was deemed possible to grow, or safe to experiment with, and fruit culture was confined to a few supposed favored localities immediately surrounding some of the old Missions in the southern portions of the State, and the varieties of fruit cultivated was exceedingly limited.

The immense plains constituting the next more elevated table of lands back from the rivers and stretching off towards the foothills in either direction, covered as they were each succeeding summer with a luxuriant growth of wild oats, were in those days considered of no value except as ranges for the countless bands of wild mustangs and wild horned, high lipped Spanish cattle that roamed over them. A few isolated, and in those days considered useless and foolhardy experiments, were made with this class of land by the cultivation of wheat and barley. Unexpected and gratifying success attended the timid experiments. The world knows the result.

Diversity of Products.

Our products, instead of being confined

to a few of the more necessary staples of life, have been cautiously and slowly, but surely and profitably, multiplying, until we now cultivate in greater or less abundance and perfection nearly every article of necessity or luxury that is grown from the earth within the temperate and tropical zones. We are competing with France in the production of wines, brandies, raisins, and silk cocoons, with Germany and Austria in beet sugar, and will soon be able to supply not only our own demand for this article, but the entire demand of our sister States as well. Encouraging experiments have been made in the cultivation of tea and coffee. The cultivation of rice to a limited extent has been attended with such perfect success on some of our swamp and tide lands as to warrant the belief that this valuable staple can be grown here in quality equal to the best produced in the Carolinas themselves. Cotton and the ramie plant have both been most successfully cultivated, and New Zealand flax and common flax have also been successfully cultivated in various portions of the State; and while the latter is grown very extensively and profitably for the seed, the time when all will be extensively cultivated for their fibres is only delayed for want of proper manufacturing facilities to render those fibres available.

It has long since been proven that the best tobacco lands of Virginia cannot outdo us in the production of this article in quantity; and by the perseverance and skill of a citizen of our State it has this year been successfully demonstrated that we can equal if not excel her in quality.

At our last State Fair were shown some samples of opium which, upon being tested by some of our most skillful chemists and physicians, were pronounced equal to the best imported article, and we are assured by the exhibitors that its production in quantity at the prices it commands may be made very satisfactory profitable.

The cultivation of the castor bean and the manufacture of the oil is becoming a permanent and remunerative business in some portions of the State; Yuba county alone having grown the last year over 600,000 pounds of beans, while the product of the State was over 700,000 pounds. This, at four cents a pound to the producers, paid them \$28,000. There is no reason why we should not extend this business and become large exporters of the oil, as nearly all portions of the State are equally well adapted to raising the bean.

The cultivation and preparation of chicory has also been successfully carried on in Yolo county for a number of years past by a company of Germans, and is growing into a business of no little importance. The product of the firm the last year was 135 tons valued at \$20,000. Other counties are also engaging in the business to some extent—\$5,000 worth having been grown and prepared in San Joaquin the past season. The soil of all our river bottoms of a sandy loam is well adapted to this product, and it can therefore be extended almost without limit, as its demand for commerce is co-equal with that of coffee, with which and as a substitute for which it is used.

English mustard is being produced in some of the southern counties quite extensively, Monterey alone having produced the last year nearly 13,000 bushels, valued at over \$20,000, while in Santa Barbara there was gathered \$40,000 worth of wild mustard seed, and in other counties a considerable quantity, swelling the value of the product of the latter variety alone in the State to the sum of \$60,000.

The value of the broomcorn crop for 1870, produced principally in the counties of Yuba, Sutter, and Amador, was over \$40,000.

Fruits.

As to the production of fruits and nuts, both of the temperate and tropical climates, there is probably no other equal area of the earth's surface, embraced in a single body or laying together, that can excel or equal our State in the number of kinds or general good qualities of the varieties produced. A careful comparison of the apple grown in the elevated foothills of our State with the same varieties exhibited at our last State Fair from the States east of the Rocky Mountains, ranging from Massachusetts to Kansas, proved most conclusively that for general good qualities of flavor and keeping, our fruit is equal to the best, and in size, form, and color, and general inviting appearance, is far superior to any. While the apples from all the other States show the effects of the ravages of insects more or less and in one way or another, ours are perfectly free from all damage or imperfections caused by these fruit pests.

The extremes of our climate, from the warm valleys of the coast foothills to the high altitudes of the Sierras at which apples are cultivated, successfully, are so great that with a little care in selecting varieties and in preparations for keeping this most valuable of fruits, we may have our markets supplied with fresh apples the year round. Our peaches, plums, prunes, figs, apricots, nectarines, cherries, strawberries, blackberries, raspberries, and gooseberries, are universally admired and highly relished by all who visit our State during the fruit season, while the superiority of our pears and grapes has created a market for them everywhere, limited only by the means of transportation and the distance to which they can be conveyed in good condition.

Of the tropical fruits we have for years and almost centuries at some of the old Missions in the southern portion of the State, been producing oranges, lemons, limes, and olives, and they are now becoming almost as common in the orchards of those localities as apples, pears, and plums, and are found in the markets of all the principal towns of the State, and are preferred to any grown elsewhere and imported. Nor are these delicious fruits confined to the south, but are being grown successfully in all parts of the State as far north as Butte County, and all along the foothills on either border of the great central valleys.

In many of the southern counties successful experiments are being made with other valuable varieties of tropical fruits and exotics. The pineapple, the banana, the mango, the cocoanut, the plantain, the loquat, the Chinese guava, yellow jambe, the date, and some other highly prized varieties of fruit, have been perfected in the open air in this portion of the State. As it is an important fact that many of the most valuable fruits and berries now cultivated extensively in the United States are natives of a more mild climate than that in which they are found to do the best, we feel warranted in recommending continued efforts in the cultivation of the above named fruits and the introduction of other valuable kinds from the tropical countries.

Stock.

In stock, our California bred horses are proving superior in speed, endurance, and general good qualities to the best raised in the Atlantic States or Europe.

As the highest value of the horse depends as a general proposition upon the judicious crossing of the best blood and highest type of nerve and muscle, and as this happy union of qualities can only be determined by severe and actual test on the track or road, it is of the highest importance to those who make the breeding of horses a business for profit that some perfectly unbiased and fair system for the trial of the speed and endurance of young horses should be inaugurated.

The Agricultural Societies of this State, recognizing the development of the best and most valuable qualities of the horse as much a part of their duties as the improvement on cattle for the production of beef or butter and cheese, or of sheep for the production of wool and mutton, have undertaken to inaugurate a system by which these valuable qualities may be honestly and thoroughly tested. Their efforts in this direction have been so generally successful that millions of dollars have been added to the value of the horses of the State, while at the same time most valuable lessons in breeding have been inculcated. It is better to double the intrinsic and serviceable value of our horses than to double their number without increasing their value.

Our short horned cattle, born and bred here, excel their foreign bred and imported ancestors, inasmuch that they are coming in demand for export to improve the original stock in the countries from which they are derived.

Our fine-wooled merino sheep suffer no depreciation when compared with the best flocks of Germany or France, and their fleeces are as much sought after by manufacturers of fine cloths as the best clips of Spain or Australia.

Our Cashmere and Angora goats become more vigorous and hardy than in their native countries, and their fine silky fleeces of mohair keep pace with the improvement of the animals themselves.

In such an expansion of our agriculture and such an improvement in its diversification and condition as we have made since the drouth of 1864, is to be found the principal reason why under the influence of an almost equal drouth of 1871, all our industries have suffered so much less than they did at that time.

[To be continued.]

USEFUL INFORMATION.

Vegetable Soap.

Many plants in different countries furnish useful substitutes for soap to the natives, when there are no conveniences or materials for manufacturing ordinary soap. Examples of these are the soapworts, (*Sapindus*), so called from furnishing, either in the pulp of the fruit or in the root or bark, a vegetable principle called sapone. Thus the Hindus use the pulp of the fruit of *Sapindus detergens* for washing linen. The capsula of another species, when bruised, forms suds if agitated in hot water; and the natives of India use this as a soap for washing the hair, silk, etc. The aril which surrounds the seed of a South American species is used as a soap. The fresh bark of the root of *Moulinia polystachia*, called "yalhoi," pounded and moulded into balls, is used by the Peruvians in place of soap.

The *Canadian Naturalist*, from which this portion of our account is taken, also states that the bruised leaves of the European *Saponaria officinalis* forms a lather which much resembles that of soap, and is similarly useful in removing grease-spots. The bark of *Quillaia saponaria* of Central America answers the same purpose, and is used as a detergent by wood-dyers. It has been even imported largely into France, Belgium, etc., and sold in the shops as a cheap substitute for soap. A vegetable soap was prepared some years ago in Jamaica from the leaves of the American aloe, which was found as detergent as Castile soap for washing linen, and had the superior quality of mixing and forming a lather with salt water as well as fresh.

In Peru, the leaves of the *Magney agave* are used instead of soap. The clothes are wetted, and then beaten with a leaf which has been crushed; a thick white froth is produced, and after rinsing, the clothes are quite clean. The pulpy matter contained in the hard kernel of a tree called "Del Joboncillo" is also used for the same purpose. On being mixed with water, it produces a white froth. In Brazil, soap is made from the ashes of the bassena or broom-plant, (*Sida lanceolata*), which abounds with alkali. There are also some barks and pods of the native plants used for soaps in China.

The California Soap Plant.

The soap-plant of California (*Phalargium pomeridianum*) is a notable example of this class of vegetable productions, and is found exceedingly useful. The bulbous root, which is the saponaceous portion, resembles the onion, but possesses the quality of cleansing linen equal to any olive soap manufactured. Large amounts of washing fluids are made from this root at the Standard Soap Works in this city (San Francisco).

This soap plant grows all over California. The leaves make their appearance about the middle of November or about six weeks after the rainy season has fairly set in. The plants never grow more than a foot high, and the leaves and stalk drop entirely off in May, though the bulbs remain in the ground all summer without decaying. It is used to wash with in all parts of the country, and by those who know its virtues it is preferred to the best of soap.

The method of using it in its natural state is merely to strip off the husk, dip the clothes into the water, and rub the bulb on them as with soap. It makes a thick lather, and smells not unlike brown soap.

The husks are also utilized in large quantities, by being worked up into an imitation of hair for mattresses, for which purpose they are found to be a very good substitute.

At St. Nicholas, one of the Cape Verde Islands, they make a soap from the oil of the *Jatropha curcas* seeds, and the ashes of the pawpaw-tree leaf. The oil and ashes are mixed in an iron pot, heated over a fire, and stirred until properly blended. When cool, it is rolled up into balls about the size of a six-pound shot, looking much like our mottled soap, and producing a very good lather.

SMALL DANGER OF BALLOONING.—Mr. Henry Coxwell, the aeronaut, replying to the hypothesis "that one-half the number of professional aeronauts had been killed in the exercise of their vocation," says that, of the 3,500 ascents executed in Europe and America, fifteen deaths only have been recorded.

If four quarters make a yard, how many will make a garden

Electro-Plating.

In France, where the process of electroplating is regulated by law, every manufacturer is required to weigh each article when ready for plating, in the presence of a comptroller appointed by the government, and to report the same article for weighing again when the plating has been done. In this way the officers show to the fraction of a grain the amount of the precious metal that has been added, and puts his mark upon the wares accordingly, so that every purchaser may know at a glance just what he is buying.

In ordinary plating an ounce and a half of silver will give to a surface a foot square a coating as thick as common writing paper; consequently, when silver is worth \$1.25 per ounce, the value of the silver covering a foot square would be about \$1.87. At this rate, a well plated tea or coffee pot is plated at a cost in silver of not more than \$1.50 to \$2; and the other expenses, including labor, would hardly reach more than half that amount.

Electro-gilding is done in like manner. The very best electro-gilding does not necessarily add a great deal to the cost of the article plated. A silver thimble may be handsomely plated so as to have the appearance of being all gold for five cents, a pencil case for twenty-five cents, and a watch case for one dollar.

Deformed and Monstrous Insects.

We are not greatly surprised to find monstrosities among cattle, as they are of frequent occurrence. A neighbor owns a cow that has six legs, and it is not unusual to meet all kinds of monstrosities among domesticated animals, and the cause is usually attributed to close in-and-in breeding or attempting to cross widely different races. But how are we to account for such freaks when they occur among lower forms of life, for instance, among insects? Such monstrosities do sometimes occur even among minute forms as well as among the larger animals. Beetles, for instance, have naturally six legs; but not long since a specimen of *Pterostichus Prevostii*, Dejean, was found in Switzerland, having two supplemental legs affixed to one of the ordinary hind legs.

That insects fight and often become maimed is well known to every observer; but whether such deformities have any effect upon the future progeny is a question I leave for Darwinians to answer. I have a specimen of *Carabus* that has one eye in the proper place and the other half hidden in a depression on the under side of the thorax. Perhaps my capturing of this specimen has presented the evolution of a race of cross-eyed beetles; if so, what a pity.

OLD SHOES.—You probably think that if you look sharply at an old shoe, when you throw it away, you will know it again if it ever comes back to you. But that doesn't at all follow. One of these days you may button up your dress with an old pair of slippers, comb your hair with a boot, or grasp a cast off slipper while you eat your dinner. You don't see how this can be? Well we'll tell you. Old shoes are turned to account in the following manner: They are cut into very small pieces and kept for a couple of days in a solution of sulphur. The effect of this is to make the leather hard and brittle. Next the material is withdrawn from the action of the chloride of sulphur, washed with water and then dried. When thoroughly dried, it is ground to powder, and mixed with some substance like glue or gum, that causes it to adhere together. It is then pressed into molds and shaped into buttons, combs, knife handles, etc. So you see how it may come to pass that you will comb your hair with a boot and fasten your clothes with a slipper.

LIQUID POLISH.—The preparation of blacklead ready for use in a fluid state, is a recent English invention. The composition adopted consists of black lead, such as is used for polishing stoves and for other uses, combined with turpentine, water, and sugar or saccharine matter, and the proportions which have been found to answer well are, to each pound by weight of blacklead, one gill of turpentine, one gill of water, and one ounce of sugar; but these proportions may be varied; and in some cases all the ingredients are not necessary.

ELASTIC VARNISH FOR LEATHER.—Take two parts by weight of resin, and one of india rubber, and heat them in an earthenware vessel till they are fused together; after which they should be stirred till they are quite cold; a little boiled linseed oil may be added while the materials are hot

GOOD HEALTH.

GLYCERINE LYMPH.—Prussia is avowedly the country where regular re-vaccination is most generally practiced, the law making the precaution obligatory on every person, and the authorities conscientiously watching over its performance. As a natural result cases of small-pox are very rare. It has, however, been objected there as here, that lymph is scarce. To make the most of such lymph as there is, some of the European governments have tried its application mixed with glycerine, and the result has been so successful as to lead to a public recommendation of the mixture to official vaccinating surgeons. The manner in which the glycerine lymph is prepared is thus described:—

The pustules of a healthy vaccinated person are opened with a needle, and the effluent matter carefully removed by means of a lancet, the same instrument being gently applied to assist the efflux. The lymph is then best placed in the hollow of a water glass, and there mixed with twice its quantity of chemically pure glycerine and as much distilled water. The liquids are thoroughly well mixed with a paint brush. The mixture may be preserved for use in capillary tubes or small medicine glasses. The lymph thus procured is considered equal in effect to pure lymph; care must, however, be taken to shake it before use. As the same quantity that now suffices for one is made to suffice for five, the discovery ought to be extremely useful in crowded cities like ours.

HEARTBURN.—Why the sensation occasioned by the presence of an acid acid in the stomach should be called heartburn it is difficult to say, as the distress is not even in the immediate vicinity of the heart. Common parlance, however, has sanctioned the misnomer, and like many other erroneous terms in general use, it is a fixture in our language. Bi-carbonate of soda is usually given for heartburn; but it merely neutralizes the acidity for the time being, and does not prevent a speedy return of the complaint. In fact, all the alkaline solutions given to relieve the burning, serve to weaken the stomach and thereby aggravate the cause of the ailment, viz., indigestion. What is needed in such cases is something, which, by toning and invigorating the gastric membrane and thus promoting a free flow of the secretion which dissolves the food, accelerates the work of digestion and assimilation. Avoid nostrums and consult a physician.

SLEEPLESSNESS.—The cure of sleeplessness is sometimes difficult, particularly in those who carry grave responsibilities. The habit of sleeping well is one which, if broken up for any length of time, is not easily recovered. Often a severe illness, treated by powerful drugs, so deranges the nervous system that sleep is never sweet after. Or perhaps long continued watchfulness produces the same effect; or hard study, or too little exercise of the muscular system, or tea and whisky drinking and tobacco using.—*Home and Health.*

LINSEED SYRUP.—To make linseed syrup for a cough, boil one ounce of linseed in a quart of water for an hour; strain it and add to the liquid the juice of two lemons and a half pound of rock candy. If the cough is accompanied by weakness and loss of appetite, add half an ounce of powdered gum arabic. Set this to simmer for half an hour, stirring it occasionally. Take a wine-glass full whenever the cough is troublesome.

DIARRHEA AND BOWEL CORDIAL.—The following is an excellent formula for a cordial to keep in the household, and was prepared by a physician who used it with great success in his practice: Chalk mixture 3½ oz.; tincture of Jamaica ginger, ½ oz.; laudanum, 1 drachm. Mix and keep in a cool place. Shake the bottle before using. Dose for an adult, one teaspoonful as often as necessary; children, half dose or less.

PULSE OF VARIOUS ANIMALS.—The pulse of our domestic animals, as given by Vatel, in his *Veterinary Pathology*, is as follows: Horse, from 32 to 38 pulsations per minute; ox or cow, 25 to 42; ass 48 to 54; sheep, 70 to 79; dog, 90 to 100; cat, 110 to 120; rabbit, 120; guinea pig, 140; duck, 135; hen, 140.

THERE is no rule of health more important than "keep the feet dry and warm, and the head cool."—An old story, but one worthy of being often repeated.

PERSONS afflicted with eruptive diseases should not use salt fish.

EXPANDING THE LUNGS.—Step out into the purest air you can find, stand perfectly erect, with head and shoulders back, and then, fixing the lips as if you were going to whistle, draw the air through the lips into the lungs. When the chest is about half full, gradually raise the arms, keeping them extended with the palms of the hands down, as you suck in the air, so as to bring them over the head just as the lungs are quite full. Then drop the thumbs inward, and, after forcing the arms backward and the chest open, reverse the process by which you draw your breath, until the lungs are empty. This process should be repeated immediately after bathing, and several times during the day. It is impossible to describe, to one who has never tried it, the glorious sense of vigor which follows this exercise.—*Home and Health.*

WHY THE COLOR OF BLOOD CHANGES.—The cause of the change of color in blood—darkening when exposed to carbonic acid, and brightening when under the influence of oxygen—is not as yet thoroughly understood. It is thought, however, that the red corpuscles contained in the blood are rendered flatter by oxygen gas, while they are distended by the action of carbonic acid. It is not improbable that under the former circumstances they may reflect the light more strongly, and thus give a more distinct coloration to the blood; while, under the latter, they may transmit more light, and so allow the blood to appear darker and duller. Both of these theories have able advocates.

DARKNESS IN THE TREATMENT OF SMALL-POX.—If a patient, in the beginning of the attack, be put in a room from which absolutely all light is excluded save that of a candle, the effect is to arrest the disease in the papular or vesicular stage; the skin between the vesicles is never inflamed nor swollen; the large scabs of matter never form over the face; there is no intense pain, and only trifling itching, and the smell is either very slight or altogether wanting.—*London Lancet.*

A WORD ABOUT CIDER.—Alexander Frear, in the *Independent*, says: "For many bilious complaints, sour cider is a specific, and in such cases is one of the good things to be received with thanksgiving. Cider guzzlers are an abomination, but, if dyspeptics will take a little with their dinner, they will find digestion greatly aided. We go in for the manufacture of a good, pure article, and, in the use of it, to let our moderation be known to all men."

OAKUM AS A DRESSING FOR BURNS.—Mr. Robert L. Snow says of oakum, as a dressing for burns, that it induces the healing of extensive sores with remarkable rapidity; it induces healing action in those indolent ulcers that are the result of defective hygienic conditions; it prevents all smell; it is cheap, saves time and trouble; and, most important of all, the resulting scars do not contract.

It is said that cod liver oil may be taken as agreeably as a sardine, if a small quantity of salt be first placed on the tongue; and castor oil may be made perfectly palatable by rubbing two drops of oil of cinnamon with an ounce of glycerine and adding to it one ounce of the castor oil.

FOR CHRONIC DIARRHEA the following is said to be very efficacious, in many cases: put a tablespoonful of wheat flour in a tumbler of water, beat until it foams, and drink immediately. If the patient is thirsty, more water may be added. It should be taken four times a day; before meal times and on going to bed.

CURE FOR INGROWING NAILS.—Heat a small piece of tallow in an iron spoon; drop two or three drops between the nail and outside flesh. It will not be necessary to repeat this if proper pains is taken to so apply this liquid cautery that it will insinuate itself in every interstice under the nail. Repeat, if necessary.

THE CLOVER CANCER CURE.—Dr. Needham, in the *Journal of Materia Medica*, advises the use of the fluid extract of clover in cancer, and from the testimony of other medical journals it would appear that it has a far better claim than cundurango to be considered a specific in that disease.

TO PURIFY THE BLOOD.—A well known physician says that he considers the following prescription for purifying the blood as the best he has ever used: One ounce yellow dock, one half ounce horseradish, one quart hard cider. Dose, one wine-glass full four times a day.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....J. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, Feb. 3, 1872.

Our Weekly Crop.

Our manager is constantly adding something new to the farm, either in the way of machinery or stock. He has this week called our attention to a trio of "Musk or Brazilian Ducks," which he has secured, and which he assures us will be both ornamental and useful to any rural home. "Water Lifting" on the farm, as in many other places, is a very important matter, and so is "How to Prevent Cooked Food from Fermenting." "How Plants Derive their Nourishment," is also a very interesting enquiry. A correspondent furnishes us some useful information about "Grapes, Wines, and Raisins." Mr. Williamson has also furnished us a very interesting essay on "Fruit Culture," which we have placed beside some "Notices of Recent Patents."

"Burnt Iron and Burnt Steel," furnishes a theme for our mechanical editor, while our scientific man discusses the matter of "Oxalic Acid in Plants," and tells us about "Another Achievement of the Spectroscope." Returning again to matters pertaining to the "Home and Farm" we find a very interesting letter from our valued correspondent "Mary Mountain," and learn the proper mode of using "Whey as Food for Animals," and get some useful hints about the "Cultivation of Cranberries," and then, after reading the last report from the "Sacramento Farmers' Club," we pass on to examine "Agricultural Notes," following which we have a carefully prepared "Agricultural Review" for the year.

Our collector of "Useful Information" tells us all about "Vegetable Soaps," "Electro Plating," "Deformed and Monstrous Insects," and "Old Shoes." The Doctor comes in with a very interesting miscellany of hints, which should be read and remembered by everyone. Our general editor next puts in an appearance with a goodly array of choice advice and hints, among which we notice something about "Seed Potatoes," "Alfalfa," "Butter Direct from Milk," the "Saccharine Quality of Beets," "Winter Melons," etc. We are also presented with a "Weather Map," by the U. S. Signal Service, from which we learn how the state of the weather, on any given day, may be mapped out for convenient inspection.

After examining this we are introduced to an interesting discussion on the Fence Question by the "Santa Cruz Farmers' Club," after considering which we step into the Home Circle, and listen to "A Melting Story" about a Vermont man who was not as honest as he should be, supplemented by a look into "Life's Brightest Hour," and something about "A Juvenile California Sculptor," and "Geyserland." Stepping into the kitchen, we listen to an interesting discussion about "The Heating of our Houses" and get many other valuable and useful hints about housekeeping.

SANTA CLARA VALLEY FARMERS' CLUB.—The members of this club are a little too busy just now with their farming operations to give their time to club discussions. Their meetings, however, will be resumed, we are informed, at an early day.

Seed Potatoes.

The season of potato planting is at hand, and as various opinions are entertained in regard to the selection of seed, we give the results of several experiments conducted by us, with a view of settling certain questions in our own mind relative thereto. We planted four rows across a narrow field with the smallest, and four rows with the largest potatoes from the same sack, and four rows from those of medium size, using the same weight of potatoes for each experiment. They were cultivated precisely alike, and the potatoes were dug when matured, on the same day.

The result was nearly a complete exemplification of the rule that, "like produces like." We had but few very large or very small potatoes, comparatively, from the seed of medium size; but a larger yield by 132 pounds than from the very large seed, and 168 pounds more than from the small seed. From the large seed we obtained a few very large potatoes, a fair proportion of medium size, with a great many small ones; whilst the small seed produced a very large proportion of small, a few of medium size and only here and there one that could be called large.

Another Experiment.

This was made at the same time using cut and uncut seed, with 30 pounds of large uncut potatoes against 20 pounds of the same large ones cut in quarters, but occupying the same number of rows, of course scattering the seed more in the row. The result was hardly a perceptible difference in the size as between the two, but the 20 pounds of cut seed produced 82 pounds more than the large uncut seed. This was conclusive that in planting very large potatoes, too much seed was given to the single hill or place in the row.

Again, potatoes of medium size were cut in halves, the seed ends, as they are called, being that end containing the largest number of eyes closely set together, though producing a greater number of stalks to the hill, gave also more in number of potatoes, but smaller than those from the butt or larger end of the tuber, and less in weight by 46 pounds. The variety of potatoes for the experiment, was the Pink-eye.

The general result would seem to be, taking into consideration the time and trouble of cutting the seed, in favor of planting whole seed of a medium size, and next to this, cutting them in halves. A further experiment was made in which only the eyes with a small quantity of the potato attached were used, and though good potatoes resulted from the growth of the larger eyes, very many of the smaller ones rotted in the ground or produced only feeble shoots with correspondingly small potatoes.

Alfalfa.

A correspondent, "B.," desires information in regard to alfalfa, the kind of seed, when to be sown, etc. We know of but one true kind or variety of alfalfa, the blue flowering. There is a species of mountain clover in California, sometimes met with in the lower valleys, that bears a yellow blossom; the plant somewhat resembles the Chili clover or alfalfa in growth, but is entirely inferior as a forage plant, green or dry. We have never known any of the seed being in the market. Always get good, plump seed, and if possible not more than three years old. Sow in the fall if the ground has been fully moistened by rain; but very late fall sowing is not desirable in places where winter frosts are severe. In such localities it is better to wait till early spring, and sow when the ground can be put in proper condition; there should be a finely pulverized surface, well rolled, the seed sown and covered by drawing a brush or tree top over it.

If sown in the spring, some deem it better to sow along with it, a light seeding of wheat or barley, with a view of protecting the young alfalfa from the effects of drying winds and the heat of the sun. Others maintain that wheat or barley sown with the alfalfa is injurious, absorbing or taking up from the soil the very moisture so necessary to the alfalfa in its early growth. Every description of alluvium or rich bottom lands, reclaimed tule, or any description of good wheat lands, if the surface can be made fine and soft, and the soil is deep, are suitable for alfalfa. For a more elaborate opinion on the subject of alfalfa growing, we refer the inquirer to pages 312 and 376 of the last volume of the RURAL PRESS.

Butter Direct From the Milk.

The plan of making butter direct from the milk without "setting it" for cream, has not received as much attention in this State as it has in the East. When power is to be obtained cheaply either by steam, horse, or wind, and large quantities of milk are used, it is said to work well, and all the pans, pan washing, skimming, etc., is dispensed with; moreover, when hogs are fed with the milk after it is churned, the sweet milk which is left after the butter is obtained by this process, is much better for them than the sour milk. Messrs. Sweetzer and De Long, of Marin County, have determined to adopt the system since they have become satisfied by experimenting that they can do better than by the old way.

As the practice is somewhat new in this country, we went to see the new churu that they have had made. We found it at the shop of H. G. Pratt, 113 Commercial street, where we also saw butter boxes, butter workers, cheese-presses, churns of various sizes, and in fact, all the dairy appurtenances that a joiner can make. The churn in question is 28 inches square by 8 feet long and made of two-inch lumber. It is put together with large screws and is banded in the middle. It is simply a box of the above dimensions, there being no dasher, for the revolution brings the butter. There is a pulley on the shaft so that it can be run by horse power, and cranks are affixed so that it may be revolved by hand if necessary. We shall endeavor to find out how the owners succeed, and if well, that other dairy-men may "go and do likewise." As this is the season for orders for churns, etc., Mr. Pratt, who has been in the business some ten years, seems to have his hands full.

THE JAPANESE EMBASSY.—The Japanese Embassy, Hon. Chas. E. DeLong, U. S. Minister to Japan, and C. W. Brooks, Japanese Consul, left this morning by way of Oakland en route for Washington. The whole party numbered 112. From Omaha they will go on the Chicago and Burlington R. R., and we learn from D. W. Hitchcock, the agent of that line in this city, that arrangements have been made to give them the use of one of the finest trains possible, consisting of the magnificent Pullman Hotel cars, this being the only Pacific line on which these cars are run. The desirable accommodation of these cars was, we presume, the reason which induced the members of the Embassy to take that favorite route.

DEVONS AND DURHAMS.—Our answer to A. N. M., Twin Bridges, Montana, is this: Most decidedly Devons; they are lighter-bodied and will gather an ample supply of food where the Durhams would find it difficult to make a living. Our advertising pages will show of whom you can obtain Alfalfa seed. For time of sowing and kind of land adapted to its growth, see another short notice in this number headed Alfalfa. If A. N. M. will send for Vols. I and II of RURAL PRESS, he will find the whole subject of stock and Alfalfa growing, fully discussed.

RAINFALL.—A Danville correspondent asks, if in any one year since 1849, the rainfall in California has equalled or exceeded 40 inches.

We have no record of its having been equal to 40 inches but once; in 1861-2 there fell according to Teument's rain tables, San Francisco, 49.27 inches. By Dr. Logan's, at Sacramento, for the same years, 35.54 inches. For the exact rainfall at Sacramento from 1849 to 1872, reference can be made to the table published in our 6th of Jan. number of the RURAL PRESS, page 12, present volume.

PACIFIC JOURNAL OF HEALTH.—Unobtrusively and truly welcome, again comes to us that neatly-printed and ably-conducted monthly quarto, the *Pacific Journal of Health*. It is so beautiful in sentiment, kind words and good thoughts, that it cheers and lightens the heart; and in this regard, gem-like, it sparkles among the host of contemporary periodicals. It is only \$1.50 a year.

LEATHER.—The proprietors of the Pacific Tannery at Stockton shipped last week 5,000 pounds of skirting and harness leather to Los Angeles, and 8,000 pounds to this city to be re-shipped to Japan.

ALMOND TREES.—Dr. Kimball, of Alameda county, has recently shipped to San Diego county five thousand young almond trees.

The Saccharine Quality of Beets.

The success of the two beet sugar companies now in operation in this State, with a certain prospect of even higher prices for sugar than the present, on account of the failure of the Louisiana crop to a great extent, and the destruction and neglect of many of the great plantations of Cuba, with the constantly increasing demand for sugar throughout the world, very naturally attracts the attention of capitalists and farmers who have the money and the land for the prosecution of paying enterprises.

The first cost of beet sugar factories is so great that no one should commence the erection of one, until it had been demonstrated by practical tests, that the beets grown on the land where it is proposed to establish a factory contain the requisite per cent. of saccharine juice. Large beets can be grown almost anywhere; but large beets are not wanted for sugar making. Beets grown in a soil but slightly salt, are objectionable, and the same of soils containing the alkalis, soda or potash, and yet in Europe it is an established maxim, that any good wheat or corn land with a deep soil will produce good sugar beets.

It may not be generally known that sugar makers always possess an instrument known as the polariscope, by which the percentage of sugar in the beets can be ascertained by the simple testing of a small quantity of the expressed juice; so that if farmers would procure genuine seed of the White Silesian or German Imperial, and raise a few beets on the land intended for that purpose, and then pay a small sum, say three or four dollars, to have their beets polarized for their per cent. of sugar, as the miner has his rock assayed for the metals it may contain, it would determine the value of his land for sugar making, and thus set all doubt at rest.

WINTER WATERMELONS.—As late as the 5th of January, ult., the market of Sacramento was still supplied with an abundance of watermelons, possessing the quality of keeping in good eating condition in the climate of Northern Italy as late as the middle of February. How long they can be kept here, will be determined the present winter. These melons are from seed procured by W. Wadsworth, of Sacramento, two years ago; the variety being the one cultivated to so large an extent in the vicinity of Zombor, Hungary, and in Italy, for the purpose of sugar making. It is not that they are particularly sweeter than any other of the melon family; but, that being a late keeper, they enable the sugar-maker to prolong the season of manufacture for three months after all the summer and autumn varieties are gone. They are exceedingly prolific and an excellent food for milk cows, during a season of the year when dry grass or hay is the principal food. Our remarks are not for puffing a seed advertisement, for there are none on sale, to our knowledge.

LONG ISLAND.—Nowhere, perhaps, has the practicability of leveeing overflowed lands in the Bay of Suisun been more satisfactorily demonstrated than on Long Island. Dr. Ryer, the owner of this island, had built last summer and fall a levee four feet high with a base of ten feet. We are informed that this levee, six miles long, has protected the island completely during the late season of storms and high winds and that there has been no more water at any time upon it than fell from the clouds. Indeed there has been much less than upon the low uplands which form part of the water-shed of the district in which it is located. Notwithstanding the great seas created by the southeast winds which continued for an unusually long time, no break was made in the levee and no waves went over that were not carried by the ditch to the slough and from the slough, at low tide, to the bay. The drainage of this island has been so perfect that a small patch of wheat has grown steadily since last October and is now a foot high.

COMMUNICATIONS RECEIVED.—"On Deep plowing" by "S. P.," "California Dairying.—How Does it Pay?" "Farming and other Matters in Montana;" "Agriculture and Mining in Placer and El Dorado."

United States Signal Service.

There being considerable interest at present concerning the Signal Service Corps, some slight sketch of their extended system of meteorological reports, which is so invaluable to agriculture and navigation and the people generally, may be interesting. A short time since the War Department issued a circular for the purpose of giving the public at large some general idea of the workings and object of the Signal Service Corps. The circular is entitled "The Practical Uses of Meteorological Reports and Weather Maps;" and our information is principally derived from its pages.

In pursuance of the duty imposed upon the Secretary of War by the law providing for the announcement by telegraph and signal of the approach and force of storms, and under his direction the office of the Chief Signal Officer of the Army, at the War Department, causes meteorological observations and reports to be made daily and nightly at 70 stations, 40 of which are noted on the map herewith given. The Office Division of telegrams and reports, for the benefit of commerce, is organized for the preparation, receipt and use of these reports.

At every station three observations are taken daily, at the same moment of actual (not local) time for all stations, by the Observer Sergeants of the Signal Service. The reports are immediately telegraphed to the office of the Chief Signal Officer at Washington.

Use of the Telegraph.

By a carefully arranged system of telegraphic operations, copies of the full reports of all stations thus transmitted to Washington, or of portions of them, are sent at the same time to many of the Signal Service stations in principal cities and towns. At each station so receiving a tabular report, one or more bulletins are published. The observations are made simultaneously at the different stations at the exact hours, 7:35 A. M., 4:35 P. M. and 11:35 P. M., Washington time.

Reports.

The full reports from all stations are telegraphed to and received at Washington, translated from cipher and published in the form of bulletins of reports by the hours of 9 A. M., 6 P. M. and 1 A. M. respectively (Washington time). The bulletins wherever published, at Washington or elsewhere, exhibit the following particulars, viz: Height of barometer; change since last report; thermometer; change in last 24 hours; relative humidity, in per cent.; direction of wind; velocity of wind, in miles per hour; pressure of wind, in pounds per square foot; force of wind, reduced to Beaufort's scale; amount of cloud; rainfall since last report, in inches and hundredths, and state of weather.

Weather Maps and Bulletins.

At the more prominent stations and those in large cities, Weather Maps are posted conspicuously every morning, showing, by means of variable symbols, the morning reports of the different stations. The midnight report is gratuitously furnished to morning newspapers that are published in a city where a station of observation may be, and the morning report is also delivered to the afternoon papers in time for publication.

In addition to these bulletins, a table of Synopses and Probabilities is prepared at the office of the Chief Signal Officer and issued thrice daily, at 1 A. M., 10 A. M. and 7 P. M. A weather map is also issued, showing the condition of the weather in all places which are in communication with the Corps. We give herewith a

fac-simile of one of these maps, from which our readers may be able to judge of their efficiency and completeness. This map is a *fac simile*, on a reduced scale, of the one published Sept. 27th, 1871, for 71deg. 47m. A. M.

Utility of the System.

As we remarked in a former issue, the verification of the prediction of the Signal Corps by our last great storm has caused more general attention to be drawn to its benefits on this coast, although the system has been thoroughly inaugurated throughout the East, and is now in good working order. The maps and bulletins are consulted by merchants, ship owners, farmers, and in fact, by all who are enlightened enough to appreciate them, and have almost become as necessary as town clocks. When the entire system has become thoroughly organized in our part of the country it will be of great advantage to all classes who may be at all interested in meteorological changes.

The Science of Meteorology

Is still in its infancy and it cannot therefore be expected that the exactness of more favored sciences can be attained, and until more data and generalizations are procured, the public should make due al-

specting storms, and will continue to furnish weekly for the benefit of those who are interested in meteorological science, the result of the daily observations of the Signal Service Corps for those particular localities which will be of interest to persons on this coast. Of course these figures will come to our subscribers too late for them to make any satisfactory predictions, but they will be of value as recording the various changes, rainfall, etc., of stations mentioned.

Santa Cruz Farmers' Club.

Discussion of the Fence Law.

The Club met on Saturday, Jan. 20th. The Committee to whom was referred the question of a Fence Law for this county having made their report, the following discussion ensued:—

Mr. Cahoon.—Doubtless there are many in this county who would be benefitted by a No-Fence Law. I know of several who would like such a law, but it would drive all small farmers out of the business. Large stock owners would herd, while small ones must fence or give up keeping stock. I believe no good farming community can dispense with a fence law that

lowance for any discrepancies which occur between weather prognostics and the weather following. The Chief Signal officer of the army has just issued from his office a small pamphlet, entitled "Cautionary Signals" which fully describes the signals to be employed by his corps of observer sergeants at the various stations and points throughout the country and he says that "aware of the immense difficulty of attaining unerring and uniform accuracy in the display of signals, and anxious to aid the citizens as much as possible in forming a correct estimate of coming changes, great pains are taken to state clearly that wherever a signal is hoisted it is simply *cautionary*, and is only designed to forewarn of probable danger. Disastrous and extensive storms rarely fail to give premonition to every one who carefully observes the daily rise and fall of mercury in the barometer. The cautionary signal, combined with weather reports from which it is deduced, cannot fail to convey to all who are really concerned to know the future weather a necessary warning of the danger that is probably approaching."

Signals.

The signal is a square red flag, with a square center of black for denoting danger by day, and a red lantern to denote danger by night. The official text says that this observance of the cautionary signal calls for frequent examination of local barometers and other instruments, by those interested, and the study of local signs of the weather, as clouds, etc. By this means those who are expert may often be confirmed as to the need of the precaution to which the cautionary signal calls attention or may determine that the danger is overestimated or past.

We are now giving every week some details in regard to laws already known re-

fences did not exceed in rods the half of his line or division fence? Well, did our Legislature compel him to build them? yet if any are to be abolished, I would suggest to begin with these and see how it works. Such an Act would certainly commend itself in one way. It would set us all quarreling with each other. We can readily see why all the lawyers favor the abolition of the fence law. I have been in communities where there were no fences and I don't want to live there or buy land there. No fences, no milk for the little ones, no butter or cheese, no nice ham, or eggs, or chickens; and what might seem strange, no hay or grain of any kind in the neighborhood. I visited one of these communities once, on business, and could find neither food or shelter for my tired horse. I tied to a big stack of wheat straw, and luckily succeeded in buying a little "mill feed" from a passing traveler.

Really good farming always includes stock raising. Constant cropping may do for a time, but those who practice will soon find both themselves and their land exhausted. Should our Legislature encourage this? A No-Fence Law would greatly encourage a growing evil in our State, viz.: *non-resident* farmers, or rather land owners. They "live in town," and when seed time comes they leave an order at the Labor Exchange for 50 men, more or less, and proceeding to their broad acres, the gang-plows and harrows are started and the job is quickly over. Then all hands are discharged and no more work done until harvest, when the twenty feet headers, the steam thrasher and freighting

teams to convey the sacks to the R. R. or steamboat landing, all busy at the same time. They make short work of this also and again the men are discharged to wander about looking for more work or idly "killing time." Again, I ask, should our Legislature encourage this? It is said that some of our lands will not bear diversified farming and that nothing but grain growing will pay; or again, that nothing but stock raising will pay. Thorough farming has yet to prove what can be done here or elsewhere.

Mr. Fletcher.—I admit that a fence law is desirable in this county. We are, however, but a "drop in the bucket." In other counties millions of acres are lying idle, and I know of hundreds of families who would go to farming, were it not for this fence law. It is not the large land owners, but the herds of "hoof and horn" who prevent the repeal of the fence law, and they openly boast of it. It is the poor men that the laws should protect, and then all these now vacant lands will be settled, and thriving communities will spring up, doing honor to our great State.

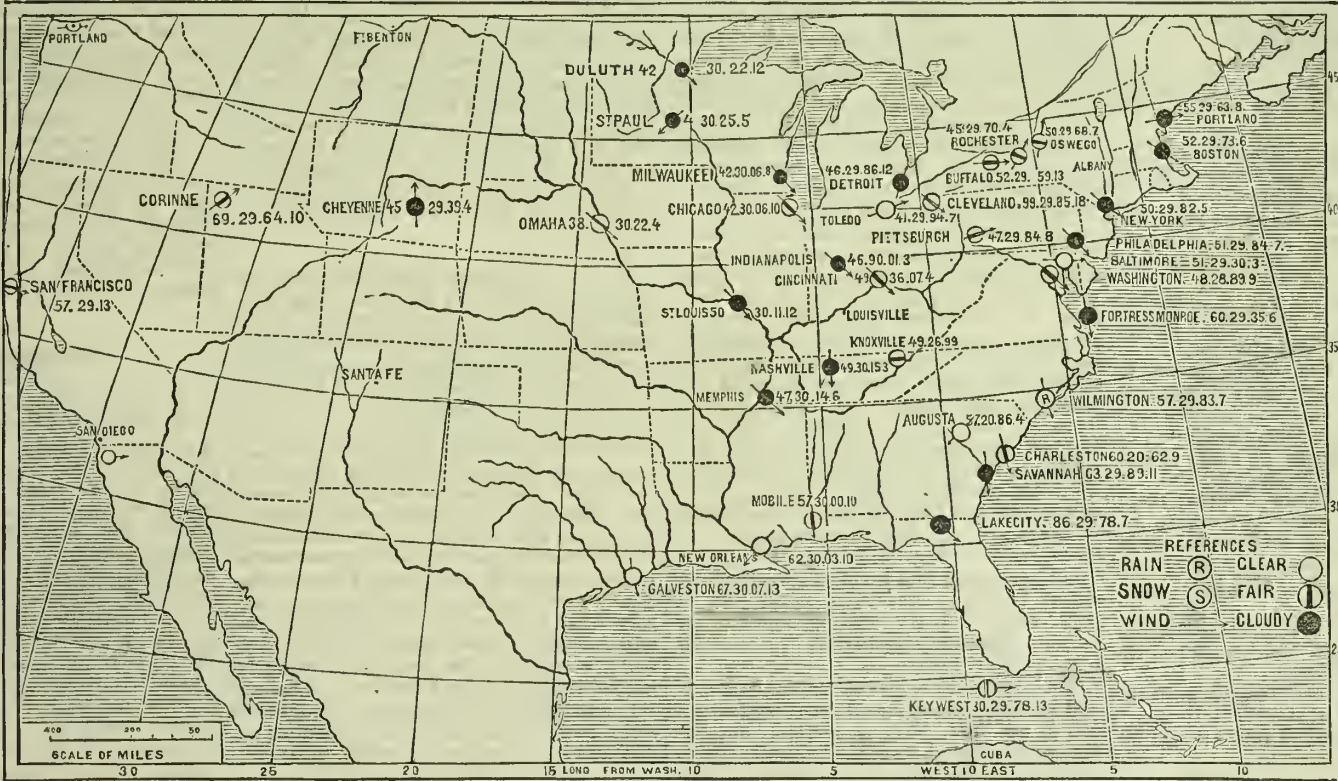
Mr. Cahoon.—The hilly land of this county is only fit for stock, and although our beach lands produce good crops, much more can be made from the stock upon the hills.

On motion the subject was continued till the next meeting. Adjourned to Saturday, Feb. 3d. The report was referred back to the committee with instructions. I will try and send it to you in my next.

R. C.

TWO YEARS IN ADVANCE.—Messrs. Chamberlain and Chaffee, of Garrote, Tuolumne Co., have taken the advantage of our offer to furnish the PRESS for two years for the sum of \$7 in advance. They take both the SCIENTIFIC PRESS and the PACIFIC RURAL PRESS on the same terms—sending us \$14. No doubt they will read our weekly issue with a little extra satisfaction, that they are ahead of the time in their patronage, while such friendship and confidence placed in us will certainly stimulate our efforts to give them better publications weekly, ere their subscription ends.

RECEIVED, from Gov. Potts, of Montana, the Report of the Auditor and Treasurer of that Territory, for the years 1870-71. As an encouragement to stock-raisers, which he thinks in the future will be one of the strongest dependencies for the revenue of the territory the Auditor recommends that all thoroughbred stock brought into the territory be exempt from assessment and taxation for the first year.



SPECIMEN OF THE WEATHER MAP AS DAILY PUBLISHED BY THE UNITED STATES SIGNAL SERVICE.



A Melting Story.

One winter evening a country storekeeper in the Green Mountain State was about closing up for the night, and while standing in the snow outside, putting up the window shutters, saw through the glass a lounging fellow within, grab a pound of fresh butter from the shelf, and conceal it in his hat.

The act was no sooner detected than the revenge was hit upon, and a very few minutes found the Green Mountain storekeeper at once indulging his appetite for fun to the fullest extent, and paying off the thief with a facetious sort of torture, for which he would have gained a premium from the old Inquisition.

"I say, Seth," said the storekeeper, coming in and closing the door after him, slapping his hand over his shoulders and stamping the snow off his feet.

Seth had his hand on the door, his hat on his head, and the roll of butter in his hat, anxious to make his exit as soon as possible.

"I say, Seth, sit down; I reckon now on such a cold night as this, a little something warm would not hurt a fellow."

Seth felt very uncertain; he had the butter and was exceedingly anxious to be off, but the temptation of something warm sadly interfered with his resolution to go. This hesitation, however, was soon settled by the right owner of the butter taking Seth by the shoulders and planting him in a seat close to the stove, where he was in such a manner cornered in by the boxes and barrels that, while the grocer stood before him, there was no possibility of getting out, and right in this very place sure enough the storekeeper sat down.

"Seth, we'll have a little warm Santa Cruz," said the Green Mountain grocer; so he opened the stove door, and stuffed in as many sticks as the place would admit; "without it, you'd freeze going home such a night as this."

Seth already felt the butter settling down closer to his hair, and he jumped up declaring he must go.

"Not till you have something warm, Seth. Seth, come, I've got a story to tell you," and Seth was again rushed into his seat by his cunning tormentor.

"Oh! it's so hot here," said the petty thief, attempting to rise.

"Sit down—don't be in such a hurry," retorted the grocer, pushing him back into his chair.

"But I've got the cows to fodder, and the wood to split, and I must be going," said the persecuted chap.

"But you musn't tear yourself away, Seth, in this manner. Sit down, let the cows take care of themselves, and keep yourself cool; you appear to be a little fidgety," said the roguish grocer with a wicked leer.

The next thing was the production of two smoking glasses of hot toddy, the very sight of which, in Seth's present situation, would have made the hair stand erect upon his head had it not been well oiled and kept down by the butter. "Seth, I will give you a toast, now, and you can butter it yourself," said the grocer, with an air of such consummate simplicity, that poor Seth believed himself unsuspected. "Seth, here's a Christmas goose, well roasted, eh? I tell you it's the greatest eating in creation. And Seth, don't you never use hog's fat, or common cooking butter to baste it with; come, take your butter—I mean, Seth, take your toddy."

Poor Seth now began to smoke, as well as melt, and his mouth was hermetically sealed up, as though he had been born dumb. Streak after streak of the butter came pouring from under his hat, and his handkerchief was already soaked with the greasy overflow. Talking away as if nothing was the matter, the fun-loving grocer kept stuffing wood into the stove, while poor Seth sat upright, with his back against the counter, and his knees touching the red hot furnace before him.

"Cold night, this," said the grocer. "Why, Seth, you seem to perspire as if you were warm? Why don't you take your hat off? Here, let me put your hat away."

"No," exclaimed poor Seth, at last, "No, I must go, let me out, I ain't well; let me go."

A greasy cataract was now pouring down the poor man's face and neck, and soaking into his clothes, and trickling down his body into his boots, so that he was literally in a perfect bath of oil.

"Well, good night, Seth," said the humorous Vermonter, "If you will go," and adding, as he darted out of the door, "I say, Seth, I reckon the fun I have had out of you is worth nine-pence, so I shan't charge you for that pound of butter in your hat."

Life's Brightest Hour.

Not long since I met a gentleman who is assessed for more than a million. Silver was in his hair, care was upon his brow, and he stooped under his burden of wealth. We were speaking of that period of life when we had realized the most perfect enjoyment, or, rather, when we had found the happiness nearest to unalloyed.

"I'll tell you," said the millionaire, "when was the happiest hour of my life. At the age of one-and-twenty I had saved up eight hundred dollars. I was earning five hundred dollars a year, and my father did not take it from me, only requiring that I should pay for my board. At the age of twenty-two I had secured a pretty cottage, just outside of the city. I was able to pay two-thirds of the value down, and also to furnish it respectably. I was married on Sunday—a Sunday in June—at my father's house. My wife had come to me poor in purse, but rich in the wealth of her womanhood. The Sabbath and the Sabbath night we passed beneath my father's roof, and on Monday morning I went to my work, leaving my mother and sister to help in preparing my home.

On Monday evening, when the labors of the day were done, I went not to the paternal shelter as in the past, but to my own home. The holy atmosphere of that hour seems to surround me even now in memory. I opened the door of my cottage and entered. I laid my hat upon the little stand in the hall, and passed on to the kitchen—our kitchen and dining room were all one then. I pushed open the kitchen door and was in heaven! The table was set against the wall—the evening meal was ready—prepared by the hands of her who had come to be my help-meet in deed as well as in name—and by the table, with a throbbing, expectant look upon her lovely and loving face, stood my wife. I tried to speak, and could not. I could only clasp the waiting angel to my bosom, thus showing to her the ecstatic burden of my heart.

The years have passed—long years,—and worldly wealth has flowed in upon me and I am honored and envied; but—as true as heaven—I would give it all—every dollar—for the joy of the hour of that evening, the long, long ago!"

A Juvenile California Sculptor.

California has produced many prodigies of talent and accomplishments in the various pursuits of life, which have, in after years, brought wealth and an enviable reputation to their possessors. Edward John Heverin is a California boy, and the son of Michael, the Pioneer Marble Works proprietor, whom everybody knows. When a small boy, Edward exhibited mechanical genius of a high order, and he could be found in his leisure hours chiseling away on the slabs in his father's yard. Before he was twelve years of age, he cut and finished a handsome marble parlor ornament. Like a sensible man, his father has fostered the natural proclivities of the youngster. Two years ago he sent him to Florence to study under Powers, the most distinguished sculptor of modern times. The youthful artist has already completed a number of works which would do credit to one of maturer years. Among other of his productions, we may refer to a Carrara bust of our late Governor H. H. Haight. This is pronounced by all who have seen it, as a model of excellence, both as a likeness and a work of art. It was made from photographs forwarded to Mr. Heverin, and most faithfully has he transferred the perishable sun picture to the imperishable marble. The bust is on exhibition at Mr. Heverin's place of business, in San Francisco.—*Transcript.*

A young lady sitting at a front window in Danbury, Mass., tossing in her hand what might have been a ball of white yarn, attracted the attention of a middle-aged man on the street, whose gallantry prompted him to hold up his hand for a catch. She accommodated him. The article proved to be an egg, and alighted on his nose; but it is not to be supposed that the lady knew it was a bad one.

Geysersland.

The valley of the Yosemite is the name of the grand, picturesque and majestic. Its superb forests, towering cliffs, and great cataracts are peerless throughout the earth. By an act of Congress it is set apart and reserved for a perpetual pleasuring ground for the world. And the world says well done.

In Southern Montana and extending into Wyoming, although only accessible from the Montana approaches, is an area of country, until a year or so past only known of in what were esteemed the mythical stories of stray hunters and prospectors. In it are hundreds of geysers, throwing at regular or irregular intervals columns of water from apertures in some instances twenty feet in diameter, to a height of over 250 feet, so grand in numbers, proportions, action and characteristics that the far-famed geysers of Iceland are insignificant in comparison. Here, too, a broad river, in quick succession, leaps, plunges into a chasm so deep and dark that at brightest noonday those who stand at its surface can see the heavens starred above them. Here are mountains of sulphur, vast areas of boiling springs, a mad volcano, eavos in the solid rock belching forth hot water and steam, and wonders innumerable—a very *Arcana Inferne*. No soul has permanently shrouded itself from the world within its weird confines. But to it will come in the coming years thousands from every quarter of the globe, to look with awe upon its amazing phenomena, and with pen, pencil, tongue and camera, publish its marvels to the enlightened realms. Let this, too, be set apart by Congress as a domain retained unto all mankind.

FASHIONABLE LIFE.—If there is any environment which can degrade a human being or harden a young heart, it is the atmosphere of merely fashionable life. You may take the tenderest and most beautiful and lovely girl, the one that is kindest at home, and loves her father and mother best, and put her into the highest circle of fashionable life, with plenty of money and plenty of scope to do as she pleases; let her dress herself as she will; cover herself with diamonds and pearls, costly silks and laces; let the love of admiration become the controlling passion; and by and by all the tenderness of that young nature passes away; her thoughts concentrate upon herself; what a figure she is cutting, who her admirers are, what conquests she can make, and by and by the youthful, beautiful modesty is gone, and the way is opened for vice, that in the beginning, would not have been dreamed of, or, if thought of, put away as utterly impossible.

A BEAUTIFUL THOUGHT.—When the summer of youth is slowly wasting away in the nightfall of age, and the past becomes deeper, and deeper, and life wears to its close, it is pleasant to look through the vista of time upon the sorrows and felicities of our earlier years. If we have a home to shelter, and hearts to rejoice with us, and friends have been gathered together around our firesides, the rough wayfaring places will have been worn and smoothed away, in the twilight of life, while many dark spots we have passed through will grow brighter and more beautiful. Happy indeed are those whose intercourse with the world has not changed the tone of their holier feelings, or broken those musical chords of the heart, whose vibrations are so melodious, so tender and so touching in the evening of life.

VARIETIES OF CATS.—John Bennet of Sunman, Ind., has thoroughbred everything except cats, and wishes some one would advertise "thoroughbred cats if there are any." There are numerous varieties of this species well worthy the attention of fanciers. Among the most valued, are *Maltese cats*, *Tortoise Shell cats*, of which the females are tortoise shell color, and the males a dingy cloudy yellow. *Angola cats* which have fur three inches long, *Mauve* (or Isle of Man) cats which have no tails.

MISS ELIZABETH STUART PHELPS, in her articles upon wrongs inflicted upon sewing women, says: "Constant sewing is harder than farming, more debilitating than 'figuring' in a bank, and takes the roses out of the cheek and the back-bone out of the system with more than the facility of a Southern Illinois ague."

MANY ladies in full dress suffer more in the shape of high heeled shoes, tight dresses, and badly placed hair pins than any amount of pleasure can compensate for.

YOUNG FOLKS' COLUMN.

A Word to Boys.

A Letter From a Young Boy in Sierra Valley.

Come, boys, and listen a few moments to your uncle. You have now arrived at an age when you must begin to think about doing something for yourselves. The first piece of advice I have for you is, to do everything well you undertake. There is but little danger of your being too particular in this respect. A boy who is careful to draw a straight line on his slate will be very likely to make a straight line through life.

Step into the jeweler's shop and see how careful the workman must be in finishing up the article he holds in his hands. Visit the ship-yard, and the man with the broad ax must learn to hew on a line or be dismissed. You think of being a clerk. Well, remember that a mistake there is little less than a crime. A man who is particular about his affairs is usually successful. How exact is a military officer in command of a body of men. A clumsy sailor will never rise to the command of a ship.

But there is one great danger which besets many young men at the present day. It is the disposition to avoid all solid improvement, and take up with subjects that require no thought. "We shall reap what we have sown."

"Let my example warn you of the fatal error into which you have fallen," said the gay Sir Francis Delaval, near the end of his life, "Pursue what is useful! pursue what is useful! Reader, if you would not make your life a curse, present and eternal, 'pursue what is useful.'"

O. S. CHURCH.

The Golden Gate.

All of our readers know that the entrance from the Pacific Ocean to the Bay of San Francisco is called the "Golden Gate," but not half of them probably know how or by whom it was named. The term or words "Golden Gate" is from "Chrysopolis." The word first appeared in Fremont's map, in 1848; it was descriptive of the fertile country surrounding the bay. Since the discovery of gold in California, it is frequently used in poetry as emblematic of an entrance to golden wealth. There is an old tradition among the California Indians that the bay originally formed a fresh water lake; an earthquake suddenly opened the chain of mountains along the coast, when the sea rushed in and changed the region to what it now is. There is another "Golden Gate," often alluded to by sacred writers in speaking of the glory of heaven and the entrance into the "Better Land."

A True Lady.

I was once walking a short distance behind a very handsomely dressed young girl, and thinking as I looked at her beautiful clothes, "I wonder if she takes half as much pains with her heart as she does with her body?"

A poor old man was coming up the walk with a loaded wheelbarrow, and just before he reached us, he made two attempts to go into the yard of a small house; but the gate was heavy, and would swing back before he could get through.

"Wait," said the young girl, springing lightly forward, "I'll hold the gate open." And she held the gate until he passed in, and received his thanks with a pleasant smile as she went on.

"She deserves to have beautiful clothes," I thought, "for a beautiful spirit dwells in her breast."

Spicy Sayings.

A teacher attending the—Institute, while a discussion was going on about the propriety of conceding to patrons in the matter of methods of teaching and subjects to be taught, said: "Some likes me to teach the earth is round, and some likes it flat. *I teaches it both ways.*" Another, being asked what plan he adopted in the absence of globes to illustrate the shape of the earth, said: "I show 'em my head."

"Pa, what can I do, unless you get me a riding-habit, up here in the country?" Get into the habit of walking, my dear."

A LITTLE four-year old being asked by his mother if he would not like to have wings and be an angel, replied: "No ma, I'd rather be a hawk and live on chickens."

DOMESTIC ECONOMY.

The Heating of Our Houses.

Entering the door of one of our "comfortable" modern houses, what meets us? A puff of scorched air from a register, redolent of burning iron—or of boiled air from a steam heater. The thermometer is standing at about 74°. We advance to the parlor. There matters are even worse, for no outside cold has entered with momentary freshness. The plants in the window look yellow and forlorn. Ominous cracks are visible here and there in the furniture—nay, a strip of ornamental veneer has actually split off from the piano and lies on the carpet. Our hostess, coming forward to greet us, is wrapped in a little shawl, and remarks that it is an awful day; that she hasn't been out, of course, but even in the warm house has felt the cold. In effect, she looks blue and pinched. Whereat we wonder, for the room feels insufferably hot; but we place ourselves beside her where she sits cowering over the register, and conversation goes on with what spirit it may under these circumstances.

At the end of an hour we are surprised to find ourselves a little chilly. That is, our head is hot enough—a little too hot, perhaps—but both hands and feet are cold, and we are inclined to agree with our friend when she opines that "the girl" must have let the fire go down. But glancing at the thermometer, we stare to see that the mercury has risen instead of falling. It is now at 80°. And, after all, why should we wonder? Nature is inevitable in her retributions, and we, no less than the poor geranium in the window, must suffer the penalty of a deranged circulation when we violate her laws of temperature.

Bad enough, if this were all! One can live and be useful under the trifling discomfort of cold extremities, as our worthy forefathers sufficiently proved. But how much of life and of life's best energies, of thought, of wit, of good-humor, of aspiration, goes down through those holes in the floor into neither silence? As from some Kobold's cave, the invisible gnomes of the furnace climb, emerge, and steal from us the choicest, finest, most intangible part of ourselves. No man ever lived and worked his best in a room heated over 68°—a sentence we should like to engrave in letters of gold on the iron plate of every register and the front of every steam heater in the land from this day forth and forever.—Scribner.

REMNANTS OF FOOD.—A dish that has no more than the appearance of palatableness has at least as much to recommend it. Nicety of appearance is inexpensive and within the reach of the humblest. We have in mind special reference to the serving of the remnants of food, which, above all dishes, require dainty arrangement. If cold meat is to be served, it should be thinly sliced and laid on a clean platter. Remnants of food should never be put away in gravy, if intended to be eaten cold. Warmed-up vegetables, stewed fruits, sauces, puddings, etc., should appear on the table in clean dishes, and not in the dish they were sent from the table in, unless cleaned. Some housewives send warmed-up food to the table in the same dish in which they were warmed, which is always untidy. A dish which is presentable at table should not be subjected to the heat required in cookery, excepting, of course, pie and pudding dishes.

STARCH POLISH.—Take common dry potato or wheat starch sufficient to make a pint of starch when boiled. Then add half a drachm of spermaceti, and add half drachm of white wax, and then use it as common starch, only using the iron as hot as possible. In this manner a brilliant polish is produced. Epsom salts have also been recommended for use in starch. To each bowl of starch add one teaspoonful of Epsom salts, and dissolve in the usual way by boiling. Articles starched with this it is said will be stiffer and will be rendered to a certain degree fire-proof.

SWEET POTATO BALLS.—First boil the potatoes, then carefully mash the farinaceous part. Boil in the meantime a pint of milk, put in some lemon peel, a couple of small lumps of sugar and a little of salt. When the milk boils, take it off the fire and add the potatoes, so as to form a paste, or rather a tolerable thick mush. When cool, make it into balls; cover these with crumbs of bread and yolk of egg. Fry these to a nice brown color and serve them up with sugar stewed over them.

TO ROAST A GOOSE.—Geese seem to bear the same relation to poultry that pork does to the flesh of other domestic quadrupeds; that is, the flesh of a goose is not suitable for, or agreeable to the very delicate in constitution—one reason doubtless, is, that it is the fashion to bring it to the table very rare done; a detestable mode. Take a young goose, pick, singe and clean well. Make the stuffing with two ounces of onions and one ounce green sage, chopped fine; add a large coffee cup of stale crumbs and same of mashed potatoes; a little pepper and salt, piece of butter size of a walnut, yolk of an egg or two; mix well together and stuff the goose—do not fill entirely—stuffing requires room to swell. Spit it, tie spit at both ends, to prevent swinging round. The fire must be brisk. Baste with salt and water at first, then with oven drippings. It will require two hours or more to roast thoroughly. A green goose, that is, one under four months old, is seasoned with pepper and salt instead of sage and onions. It will roast in an hour.

PAPER COMFORTABLES.—Most of our readers are aware of the peculiar quality of paper for resisting the passage of cold through its fiber. This peculiarity has led to the mode of making bed comfortable warmer by lining them with newspapers, which is good until the paper wears or works into holes. A writer in *Home and Health* says he has tried a similar way of attaining the same object on cold nights, when he has not had sufficient bedding at hotels, where we cannot always get just what we want. Throw off one or two of the top covers from the bed, then pull from the pocket or satchel two or three large newspapers—one very large one will do; spread them on the bed and replace the cover, and you will have a warm and comfortable night, without any perceptible increase in the weight of the bedding. Again; when you have a hard, cold ride, of ten or twelve miles against the wind, place a spread newspaper over your chest before you button up your overcoat, and you will not become chilled through. Nothing can be cheaper, and, as far as it goes, nothing more efficient.

SALT IN SOAP MAKING.—An English correspondent writes to *The Scientific American* that a very practical and most useful adaptation of common salt in partial substitution for alkali in the manufacture of soap, is now being most economically and advantageously used in that country. A soap can be produced in the bar, or molded into pattern, cheaper than any other known process; and plain and fancy soaps of every odor, color, and design, are being freely circulated, at a figure costing the public no more, when boxed, than \$2.88 or \$3.36 per ewt. of 112 pounds. This, too, where the manufacturers have to pay 30 cents per cwt. for carriage on the salt!

SPICED APPLES.—Eight pounds of apples, pared, four pounds of sugar, one quart of vinegar, one ounce of stick cinnamon, half ounce of cloves. Boil the sugar, vinegar, and spices together; put in the apples when boiling and let them remain until tender (about twenty minutes). Take them out and put them in a jar. Boil down the syrup until it is thick and pour it over.

LIQUID BLUE.—Take half a pound of the best double oil of vitriol, mix one ounce of Spanish indigo pounded very fine, scrape in a little chalk; have an iron pot half full of sand, set this on the fire when the sand is hot, put the bottle in, and let the vitriol, etc., boil gently for a quarter of an hour; take the whole off the fire, and let it stand for twenty-four hours, and then bottle it for use.

POTATO PONE.—This is a favorite dish in the West India Islands. Wash, peel, and grate two pound of potatoes; add four ounces each of sugar and butter (or beef dripping) melted, one teaspoonful each of salt and pepper; mix well together; place it in a baking-dish, and put it into a brisk oven until it is done, and becomes nicely browned.

In washing clothes care should be taken not to have the water too hot when the clothes are first put in; nor should they be boiled too long, as too much boiling is apt to give them a yellow tinge.

Straw table mats may be cleaned by washing them in washing-soda water. Lay them out in the sun, and, when nearly dry, press them between cloths and papers.

The tails of kangaroos, canned and imported from Australia, are becoming a popular article of food in the English markets. Kangaroo soup is preferred to ox-tail.

Domestic Receipts.

RUTABAGA PIE.—A Montana correspondent sends us the following directions to make a new pie, called there Montana Rutabaga Pie:—For a small family take two medium rutabagas; put them into clear plain water with a little salt added; boil until they are sufficiently soft; then add a piece of butter the size of an egg, and add sugar and cream to your taste; then mash and stir until the mass is thoroughly creamed; then grate nutmeg sufficiently, and lastly add good brandy or whisky to suit the taste. Make rich, crisp pastry the same as for pumpkin pies, and put in your mass and bake well. This pie was invented by Martha Robinson, a colored woman from Richmond, Va., and is highly esteemed here.

GERMAN PUFFS.—Melt a quarter of a pound of butter, and mix it well with half a pound of flour; add one quart of milk, eight eggs well beaten, some grated nutmeg and some cinnamon. Beat the ingredients well together, and bake the mixture in cups. Fill your cups but half full, as the puff rises very high.

STRAWS.—Nearly a quart of flour in which mix well one teaspoonful of cream-of-tartar; in this cut finely a piece of butter the size of an egg; break three eggs in, and add two cups of sugar. Dissolve one teaspoonful of soda in one cup of milk, and add it to the flour. Cut them out about as thick as doughnuts and fry them in butter.

CHOW-CHOW.—Two quarts of green tomatoes, two quarts of white onions, one dozen green cucumbers, one large head of cabbage; chop fine; season with mustard and celery seed to suit the taste. Cover with the best cider vinegar. Boil two hours slowly, stirring continually. As soon as you take it from the stove add two tablespoonfuls of salad oil. Cover tight and keep in a cool place.

EAST INDIA PICKLE.—Chop cabbage fine, leaving out the stalk, together with three or four onions, a root of horse-radish and a couple of green peppers to each cabbage. Soak the whole in salt and water for three or four days. Spice some vinegar with very strong mace, cloves, allspice and cinnamon. Heat it scalding hot. Add alum and salt, and turn it on the chopped pickles, which should previously have the brine drained from them. In the course of three or four weeks the pickles will be fit for use.

Mechanical Hints.

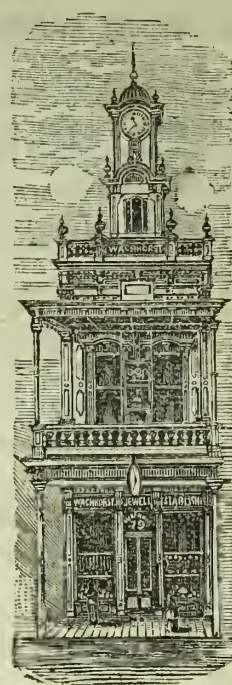
MENDING PIPE.—A correspondent of the *Scientific American* says a pipe may be mended so that it will stand both heat and water by a mixture made of glycerine, and enough litharge to form a paste as thick as putty. Use while soft.

ALLOY FOR SOLDERING STEEL.—Dr. Dingler has testified to the efficacy of an alloy for soldering iron or steel, or either of these to brass. This alloy consists of 3 parts of tin, 29½ of copper, and 7½ of zinc. When applied in a molten state it will firmly unite the metals first named.

BASSWOOD FOR WATER-PIPES.—We see it asserted that a Mr. Root, of Western New York, a farmer, has 300 rods of water-pipe made of basswood saplings, which have been laid nine years and are now, apparently, perfectly sound. He thinks basswood one of the best kinds of wood for underground water-pipes there is.

NEW OAK MADE OLD.—The appearance of old oak may be obtained by exposing any article of new oak to the vapors of ammonia. Every variety of tint may be procured according to the duration and temperature of the volatile compounds. A new oak carved chair exposed to the vapors of ammonia will, in about twelve hours, have all the appearance of having been made two hundred years before.

DRILLING TRIANGULAR HOLES FOR BLASTING.—A correspondent of the *English Mechanic* states that in the Cleveland (Eng.) mining district, it is now usual when boring for blasting purposes to make the holes of a triangular section, instead of circular, as in the conventional style, and to effect this the boring bar or jumper is partly turned on each side of its cutting alternately. No difficulty is experienced in boring the holes to this shape, and they are found more effective than round holes, the corners forming points at which the fracture of the material operated on appears to commence, the line of fracture usually forming a prolongation of the triangle. The holes averaged three feet six inches in depth, and are generally made in thirty or forty minutes. The powder charges vary from one to two pounds, according to circumstances.

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CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

(The prices given below are those for entire consignments from first hands, unless otherwise specified.)

SAN FRANCISCO, Thurs., A. M., Feb. 1.

FLOUR—We note a fair local demand with a moderate enquiry for export. The supply is large and at least 100,000 bbls. expected from Oregon, part of which is at hand. Sales reported embrace 10,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.75@5.87½; extra, in sacks, of 196 lbs. \$6.50@6.75. Standard Oregon brands, extra, may be quoted at \$6.50@6.75.

WHEAT—The business has been quiet during the week under review, at a decline in prices. Sales aggregate 10,000 sacks fair to choice at \$2.00@2.15 per 100 lbs. Quotable at close at \$2.00@2.12½ per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 4d. per cental.

BARLEY—Has been inactive during the past week, at a decline in rates. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.42½@1.60, which is the range at close.

OATS—Demand has been limited during the week under review. Sales 3,500 sacks ordinary coast to choice bay, at \$1.50@1.85 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.50@1.60 for yellow and white respectively per 100 lbs.

CORNMEAL—Is quotable at \$2.25@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.00 per 100 lbs.

RYE—According to quality is quotable at \$2.12½@2.25 per 100 lbs.

STRAW—Quotable at \$7.50@8.50 per ton by the cargo.

BRAN—Selling at \$25.00 per ton from the mill.

MIDDLINGS—For feed, are selling at \$32.50 per ton from mills.

OIL CAKE MEAL—In good demand at \$40 from the mill.

HAY—Receipts have been free, and prices at close are \$17.00@22.50 for fair to choice per ton.

HONEY—We quote Los Angeles comb at 12½@15c. Potter's in 2-lb cans, \$4 per doz.

BEESWAX—Scarce at 40c per lb.

POTATOES—Receipts have been quite free during the past week. Bodega, Tomales and Petaluma, 60@80c; Humboldt, 80@90c. per ctl.

HOPS—The range is 45@60c.

HIDES—During past week 4,960 Cal. dry sold at 18@19 and 1,110 salted at 8@9½c.

WOOL—The market has remained quiet during the week under review. Sales of 100,000 lbs. have closed out all the stock in first hands. Nominal prices for good to choice shipping grades are 20@30c per lb. Barry 17@21.

TALLOW—Market quiet at 8½@9c per lb.

SEEDS—Flax 3c; Canary, 5@7c; Alfalfa, 15@17c; Mustard—California Brown, 3@6c; Cal. White 3½@4½c. per lb.

PROVISIONS—California Bacon 13½@14c; Oregon, 14½@15c; Eastern do. 13½@14c; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14@14½; Oregon, 15½@16c; California Sugar-cured Hams, 16½@17c; Oregon do. 17@18c; Eastern do. 18@20c; California Smoked Beef, 12½@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; small Butter \$2.50@2.75; large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.40@3.60; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$1.00@1.37½ per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 20c per lb Walnuts, new, 12½c; Hickory, 12c; Brazil, 16c; Chili Walnuts, 10c; Eastern Chestnuts, 15@20c; Cocoanuts, \$6.00@8.00 per 100.

FRESH MEAT—Market has remained firm since last report. Fat Sheep are very scarce. Supplies of beef are now coming forward from Nevada. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 11@12½c per lb. do. 2d quality 9@10c per lb.; do. 3d do. 7@8c.

VEAL—Quotable at 8@12½c.

MUTTON—12@15c. per lb.

LAMB—None in market.

PORK—Undressed grain-fed is quotable at 6½@7c. dressed, grain-fed, 9½@10c. per lb.

POULTRY—Live Turkeys, 17@19c. per lb.; dressed, 21c. per lb.; large Hens \$7.50@8.50; Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$8.00@9.00; Ducks, tame, \$10.00@11.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in free supply, it may be quoted at 25@32½c; California firkin butter, 20@25c. Pickled, 25@30c. Eastern firkin, 20@25c. per lb.

CHEESE—California, 16@19c, Eastern, 17@18c. per lb.

EGGS—California fresh, 52½@55c. per doz.

LARD—California 12½@13½; Oregon in bbls. and kegs 12½@13c; Eastern in cases 14@14½c; do in tcs. 12½@13c. per lb.

FRUIT.

Mex. Oranges, M. \$20 00@25 00	Cal. do 100 2 00@2 25
California do 12 50@25 00	Bananas, bunch 2 50@3 50
Lime, M. 15 00@17 00	Apples, eating bx 75@1 50
Austin Lemons, 4 00@5 00	do cooking bx 50@1 00
Sicily do 8 00@10 00	Pears, box 1 00@1 25

DRIED FRUIT.

Apples, M. 6c @ 8c	Pitted, do 20 @ 22
Peaches, M. 8 @ 10	Raisins, M. 10 @ 15
Apricots, M. 7 @ 8	Black Figs, M. 8 @ 10
Plums, M. 5 @ 7	White, do 15 @ 20

VEGETABLES.

Cabbage, M. 1 @ 15	Marf. Squash, ton \$—@15 00
Garlic, M. 1 @ 15	

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head.

BAGS AND BAGGING—There is only a moderate demand for any kind at present, and prices remain largely nominal. Burlap sacks 15c; Flour sacks 10½@11½c. for qrs. and 15½@17c. for hlfs. Standard Gannies are jobbing at 23@24c.

BOOTS AND SHOES—There has been a fair demand during the week under review for goods in this line at unchanged rates.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do, dressed \$25; Spruce \$17@18; Redwood \$16@30 for rough and dressed, and 12 for refuse. We quote Laths at \$2.75@3.00; Shingles \$2.50@2.75. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, 4" x 4"	\$31.00 to \$32.50
Refuse do do	20.00 to 21.50
Merchantable surfaced and rough clear	28.00 to 30.00
Refuse surfaced and rough	18.00 to 20.00
Merchantable beaded flooring	28.00 to 30.00
Refuse do do	18.00 to 20.00
Merchantable rough	11.00 to 12.00
Refuse do do	22.50 to 25.00
Penny Pickets	15.00 to 16.00
Rough Pickets	15.00 to 16.00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manila, 19½; Rio 19½@20. Ground Coffee in cases 30c; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 5c, and in cases at \$8.00; Salmon in bbls. \$6.00@7.00, hf do, \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@55c per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.62½, per ream.

PAINTS—We quote White Lead at 10@12½c; Whiting, 2½c; Chalk 2c; Paris White 3c; Ochre 3@3½c; Venetian Red 3@5c; Litharge 9@11c. per lb.

RICE—Sales of China No. 1 at 8½@8¾c and No. 2 at 7½@8½c per lb; Siam, quotable at 6½@7½c in mats; Carolina, Table, 9@10; Hawaiian, 9@9½c per lb.

SUGAR—We quote Cal. Cube at 14½c; Circle A Crushed, 14½c, and Granulated 14c; Yellow Coffee and Golden C, 12½@13c; Hawaiian 8@12c as extremes per lb.

SYRUP—Prices may be given as follows: 82½c in bbls, 85 in hf bbls, and 90c in kegs.

SALT—California Bay sells at \$5@5.15; Carmen Island, in bulk, \$14; Liverpool Coarse, \$18@20; do Stoved, \$23.00 per ton.

SOAP—The prices for local brands are 5@10c, and Castile, 12@15c per lb.

TEA—We quote Ilyson at 60@75c; Gunpowder and Imperial, 55c@1.05; Young Hyson and Moyune, 90c@1.15; Foo Chow Oolong, 50@90c; Pouchong, 37½@45c; Sonchong, 50@75c; Japan 40@75c. per lb.

San Francisco Metal Market.

(Corrected weekly by Hooker & Co., 117 and 119 Cal. street.)

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, February 1, 1872

IRON.—		
Spot and English Pig Iron, per ton	\$52.50	@ 55 00
White Pig, per ton	45 00	@ 48 00
Refined Bar, bad assortment, per lb.	04	@ 04½
Refined Bar, good assortment, per lb.	05	@ 05½
Boiler, No. 1 to 4	05	@ 05
Plate, No. 5 to 9	05	@ 05
Sheet, No. 10 to 13	05½	@ 06
Sheet, No. 14 to 20	06	@ 06
Sheet, No. 21 to 27	06	@ 06
Horse Shoes	7 50	@ 8 00
Nail Rod	10	@ 10
Norway Iron	8	@ 8
Roller Iron	5	@ 5
Other Irons for Blacksmiths, Miners, etc.	5 @	6
COPPER.—		
Sheathing, per lb.	24	@ 26
Sheathing, Yellow	21	@ 23
Sheathing, Old Yellow	11	@ 11½
Composition Nails	24	@ 24
Composition Bolts	24	@ 24
TIN PLATES.—		
Plates, Charcoal, 1X per box	12 00	@ 12 00
Plates, 1C Charcoal	10 00	@ 10 50
Roofing Plates	11 00	@ 11 00
Banca Tin, Slabs, per lb.	—	@ 45
STEELE.—English Cast, per lb.	16	@ 17
Drill	17	@ 17
Flat Bar	17	@ 20
Plough Points	3 75	@ 3 75
Russia (for mould boards)	12½	@ 12½
QUICKSILVER.—		
Lead—Pig, per lb.	05½	@ 06½
Sheet	08	@ 8½
Pipe	9	@ 10
Bar	08	@ 09
ZINC.—Sheets, per lb.	10	@ 10½
Borax—Refined	25	@ 30
Borax, crude	5	@ 5

THE PACIFIC RURAL PRESS is one of the most magnificent agricultural papers published in America.—Greeley Tribune.

San Francisco Retail Market Rates.

THURSDAY NOON, February 1, 1872.

MISCELLANEOUS.

Butter, Cal. fr. do	40 @ 50	Wheat, sds, 22x36	12 @ 13
Pickled, Cal. fr. do	35 @ 40	Potato G'y Bags	22 @ 24
Do Oregon, B.	25 @ 30	Second-hand do	15 @ 15
Honey, per doz.	20 @ 25	Goat Skins, do	15 @ 15
Cheese, per doz.	20 @ 25	Sheep sds, w/o	50 @ 75
Eggs, per doz.	20 @ 25	Sheep sds, plain	12½ @ 25
Lard, M. do	18 @ 20	Goat skins, each	25 @ 50
Sugar, cr. do	10 @ 10	Cal. Hides	18½ @ 19
Beet, do	10 @ 10	Salted do	9½ @ 9½
Sugar, Map. do	25 @ 30	Dry Mex. Hides	17½ @ 17½
Plums, dried, B.	15 @ 20	Salted do	9½ @ 9½
Peaches, dried, B.	15 @ 20	Codfish, dry, B.	10 @ 12½
Wool Sacks, new	67½ @ 70	Live Cal. Hides	9 50 @ 10 00
Second-hand do	67½ @ 70	Tallow	8½ @ 9

PRODUCE, ETC.

Flour, ex, per bbl.	7 00 @ 7 00	Beans, cwt.	1 85 @ 2 20
Superfine, do	6 50 @ 6 50	Beans, cwt.	3 50 @ 4 50
Corn Meal, 100 lb. do	3 00 @ 3 00	Dry Lima Beans	8 @ 8
Wheat, per 100 lbs. do	2 40 @ 2 40	Hay, per ton	25 00 @ 30 00
Oats, per 100 lbs. do	1 75 @ 2 00	Potatoes per cwt.	75 @ 12½

FRUITS, VEGETABLES, ETC.

Pine Apples, per doz.	5 00 @ 5 00	Cress, per doz	20 @ 25
Bananas, per bunch	30 @ 30	Dried Herbs, b'h	25 @ 50
Do Oregon, B.	20 @ 20	Onions	5 @ 5
Cranberries, per g	60 @ 60	Green Peas, B.	10 @ 10
Cranberries, O.	12 @ 12	Lettuce, per doz.	12 @ 25
Pears, table, per box	10 @ 10	Mushrooms, per lb	12½ @ 15
Plums, Cherry, " "	6 @ 8	Horseradish, per lb	20 @ 20
Oranges, per 100 lb. do	30 @ 30	Oaks, dried, B.	50 @ 75
Lemons, per 100 lb. do	50 @ 50	Pumpkins, per lb	3 @ 4
Limes, per 100 lb. do	2 00 @ 2 00	Parsnips, per bunch	20 @ 20
Figs, dried, per lb.	2 @ 2	Parsley	25 @ 25
Asparagus, wh.	75 @ 75	Pickles, per gal.	50 @ 75
Artichokes, doz.	50 @ 50	Rhubarb, per lb	25 @ 25
Russell's sprts.	10 @ 12½	Radishes, per bunch	25 @ 25
Beets, per doz.	25 @ 25	Red, do	25 @ 25
Potatoes, sweet, " "	2 @ 3	Marrowfat, do	3 @ 3
Potatoes, sweet, " "	3 @ 3	Hubbard, do	4 @ 4
Artichokes, doz.	50 @ 50	Rock Lima, do	6 @ 8
Cauliflower, per doz.	50 @ 50	Spinage, per bunch	25 @ 30
Cabbage, per doz.	10 @ 10	Salsify, per bunch	25 @ 25
Carrots, per doz.	10 @ 10	Turnips, per doz.	20 @ 25
Celery, per doz.	75 @ 100		

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece	57½ @ 1 00	Hams, Cress' s e	— @ 25
Turkeys, per lb.	30 @ 30	Choice D'field	— @ 25
Ducks, wild, per lb.	75 @ 75	Whittaker's	— @ 25
Artichokes, doz.	25 @ 25	Johnson's Dr.	— @ 25
Teal, per doz.	3 00 @ 3 00	Flounder, per lb.	— @ 25
Geese, wild, pair	60 @ 60	Salmon, per lb.	15 @ 18
Tame, per pair	25 @ 30	Smoked, new	— @ 20
Hens, each	75 @ 100	Pickled, per lb.	6 @ 6
Snipe, per doz.	1 50 @ 1 50	Rock Cod, per lb.	— @ 15
English, do	2 50 @ 3 00	Purch, s water, B.	— @ 12
Quails, per doz.	2 25 @ 2 50	Fresh water, B.	— @ 12
Pigeons, dom. do	30 @ 30	Lake Big Trout	— @ 37½
Wild, do	2 00 @ 2 00	Smelts, large B.	— @ 15
Hares, each	75 @ 100	Small do	— @ 15
Rabbits, tame	1 75 @ 2 00	Soles, per lb.	30 @ 35
Wild, do	2 50 @ 3 00	Herring, fresh	4 @ 4
Squirrel, per pair	25 @ 30	Sm'kd, per 100	— @ 100
Beef, tend, per lb.	20 @ 25	Tomcod, per lb.	25 @ 25
Corned, per lb.	10 @ 10	Turrapin, per doz.	— @ 20
Smoked, B.	15 @ 15	Marzipan, per lb.	— @ 25
Pork, rib, etc., do	12½ @ 15	Fresh, do	— @ 25
Chops, do	15 @ 20	Sea Bass, per lb.	— @ 25
Veal, per lb.	15 @ 20	Halibut, per lb.	— @ 25
Snipe, do	20 @ 20	Sturgeon, per lb.	— @ 25
Mutton, do	15 @ 15	Oysters, per 100	— @ 25
Leg, per lb.	15 @ 15	Cheep, per doz.	— @ 100
Lamb, per lb.	18 @ 18	Turbot	— @ 75
Tongues, beef, ea	75 @ 75	Crabs, per doz.	— @ 50
Tongues, pig, ea	15 @ 15	Soft shell	— @ 15
Bacon, Cal. per lb.	18 @ 20	Shrimps	— @ 15
Oregon, do	18 @ 20	Prawns	— @ 15
Hams, Cal. per lb.	18 @ 20		

* Per lb. + Per dozen. † Per gallon.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, February 1, 1872.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, per lb.	26 @ 29
Santa Cruz Leather, per lb.	25 @ 29
Country Leather, per lb.	25 @ 28
The market is well supplied with French stocks, and prices have a downward tendency. Heavy California skins are firm, with an upward tendency.	
Jodot, 11 to 19 Kil, per doz.	\$100 00 @ 100 0

TO POST-MASTERS. GREAT INDUCEMENTS.

The Publishers of the **PACIFIC RURAL PRESS** now offer to the Post-masters and regular Express Agents throughout the Pacific States exceedingly liberal terms for soliciting subscriptions to such a weekly as they can with all confidence recommend with pride, thus promoting home industry; and subscribers will thank and honor you for it. Be cautious of recommending journals which you are not positive are up to the wants of subscribers on this coast. Bear in mind, too, that a monthly journal of equal size to ours, at \$1 a year, is far dearer than the **RURAL PRESS** at \$4, with thirteen issues every quarter. Get up clubs for your home paper. It has a greater variety of fresh and fine reading, which is appreciated here, than **AND FARMING CLUBS. JOURNAL.** Its popularity with its readers is unsurpassed. Send for sample copies and rates to agents. Get up lists this year and you can easily renew them next. See subscription rates on 8th page. Work commenced at once will not be regretted. **DEWEY & CO., Publishers.**



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as it were, is required on the Pacific Coast, on account of its peculiar seasons, soil, climate and topography. The new discoveries, ideas, and useful hints evolved in its rapid progress, are to be observed with interest, and read, as reported in the **PACIFIC RURAL**, with profit by practical and progressive agriculturists everywhere. Sample copies of the **PRESS**, post paid, 10 cts. Subscription, \$4 a year.

DEWEY & CO., Publishers,

No. 333 Montgomery St., San Francisco, Cal. Nov., 1871

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15 Years Established.
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8 and 10 J street, **SACRAMENTO.**
Garden, Flower, Field, Fruit, Tree and Shrub, Grass and Clover Seeds, Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound. My annual catalogue is ready and will be forwarded on application **FREE.**

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50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good quality.

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Always on hand, a Large and Fine Assortment of Flowering Plants and Seeds.

HOP ROOTS FOR SALE.

I have a lot of Choice Hop Roots for sale at Lowest Rates. The suckers, instead of being cut off from the stock, were covered with earth, thus promoting the growth of the "laterals," which are used for planting. I can also furnish healthy Lawton Blackberry Plants at \$8 per thousand. Orders may be addressed through **DEWEY & Co.** of the "Rural Press;" **DRAKE & EMERSON**, 521 Sansome St., San Francisco; **W. R. STRONG**, 8 and 10 J St., Sacramento; or direct to me, 25v2-3m-16p **CALVERT T. BIRD**, San Jose, Cal.

Something New in the United States. SEEDS

FAMOUS TURKISH MUSKMELON,
Which Keeps Sound the Year Round,
A LUXURY FOR ALL SEASONS.

Now for Sale for the first time in this country, by **DEWEY & CO.** of this office.

Small packages will be sent, post paid, to any part of the Union for 50 cents.

These Melons are certainly a remarkable production, and we believe fully worthy of a trial by those who are fond of this kind of Fruit and would like the convenience and novelty of having it throughout the year. The following is from the introducer, who has given us the sole agency for furnishing the Seeds throughout the United States:

December 29, 1871.

MESSRS. DEWEY & Co.: I herewith send you, per Wells, Fargo & Co.'s Express, a fine lot of seeds of the celebrated Turkish Muskmelon, which you are at liberty to dispose of.

Now, as you are aware of and know of its value and the rarity of such Seeds and Melons in the United States, they therefore ought to command a good deal of attention. You may introduce them, with the exclusive agency, in any market on the Continent. They will grow in any soil that any other Melon will grow in. The usual time of setting Melons will suit them. At the maturity of the Melon, for winter use, you must be careful and not bruise it; handle it carefully, and when ripe, place it in twine netting or its equivalent, hang it up, and I will guarantee that it will keep the year round and retain its fine flavor—the same as if it had just been plucked from the vine.

It has cost me time, and trouble, and expense in procuring the Seeds first. Furthermore it has been my desire to prove their success on this coast. They have given entire satisfaction thus far (two seasons), and I have not the least doubt but that they will grow successfully in any part of the United States. This is the only lot that I know of which has ever been imported to the United States. Therefore, from its rarity, and from the rich flavor which it contains, its cultivation is a great object, and will enable its possessor to say, in mid winter, "Let us eat a melon," which should be sufficient to open the ears of the epicurean, at the hotel or in his own private dining room.

Respectfully, etc.,

R. MARCHELLA.

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Smith's Cast Iron Pier, durable as stone, and adapted to resist rapid currents, put in at low rates.
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THE "BLANCHARD CHURN,"

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HARDWOOD CHURNS,

Butter Workers, Etc.

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THE FINEST BRED FOWLS IN AMERICA.

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LIGHT BRAHMAS, Seven Different Strains;
DARK BRAHMAS, Imported from England and Ireland;
HOUDANS, direct from France;
LA FLECHE, direct from France;
SILVER SPANGLED HAMBURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
WHITE COCHINS,
BUFF COCHINS,
DUCK WINGER BANTAMS,
GOLDEN SEABRIGHT BANTAMS,
JAPANESE BANTAMS,
HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Turbits, Fantails; and Madagascarc and Lop-Eared Rabbits.

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China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to **THOS. E. FINLEY**, Manager,
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OFFICE—No. 113 Leidesdorff street.

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FINE CHICKEN EGGS.



THE UNDERSIGNED IS NOW PREPARED to furnish EGGS for breeding of the following varieties: Dark and Light Brahma; Buff Cochins, Partridge Cochins, La Fleche, Silver Spangled Hamburg, White Leghorn, White Face Spanish, and Silver Laced Sebright Bantam.

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Of the following well known varieties:

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In Limited Quantities. Apply to

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Light Brahmas.

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\$20 per Pair. Seven Months Old.

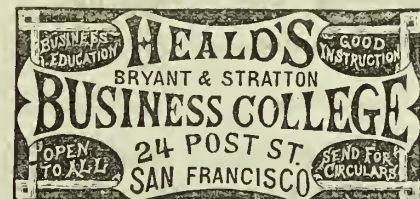
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Original Breeders of **CHESTER WHITE PIGS.**

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Apple Grafts on whole roots.....\$10.00 per M.
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Multicaulis,

1 year old, \$20 per Thousand.
Do. 2, 3 and 4 years, \$25, \$35 and \$40.
ALBA AND MORETTO, 2, 3 and 4 years, \$40, \$50, \$60
CUTTINGS of all kinds \$2.50 per thousand.

TREES FOR SHADE!

Finest and Cheapest in the State.

White and Black Mulberry

From 1½ to 3 inches diameter, and 15 to 20 feet high—from \$25 to \$30 a hundred, or 30 to 50 cents each.

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From 50 cents to \$1.50 each.

Silkworm Eggs and Silk Manual.

Liberal discount to the trade.

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GOATS

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PURE BLOOD

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ALL GRADES.

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GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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—IMPORTERS OF—



HARDWARE,
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Gang Plows,

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Etc. Etc.

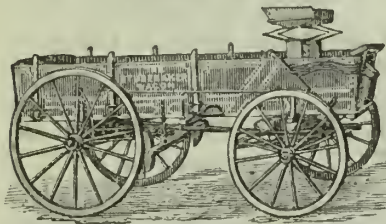
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Gang and Single Plows.

I am prepared to furnish my popular Gang and Single plows, of the lightest draft (best Plow to scour in sticky soil), and the most efficient Plow made. My leverage for raising the gang has no equal—a thirteen year old boy can work it with ease. I make any pattern of mould desired, to order. Twenty years experience in plow making enables me to demonstrate all I say, and every Plow is warranted to do all I recommend it to perform.

Send your orders early, and for further information apply to
A. ELLISON, Patentee and Manager,
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I have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.

IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

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Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.
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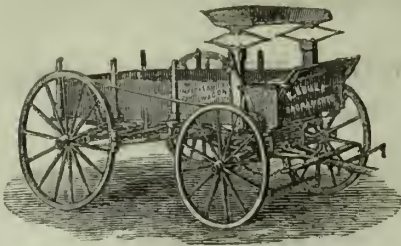
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Detergent, Prize Medal and Laundry Soaps;
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Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

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White Prince was five years old last spring, and possesses the square, compact, solid form, with the good action of the Percheron race.

The Mare was bred in Ohio, from Imported Percheron Stock, and has been

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Louisa, at four months old, weighed 640 pounds; girths, 5 feet; weight is not a matter of great interest; but the square, compact, nice form which she presents, is a matter to be especially noted.

I also at the same time (December last) imported

TWO THREE-QUARTER BLOOD MARES,

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From the above it will be seen that I am able to raise Full Bloods and High Grades.

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Fine Imported Poultry,

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Guaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed.

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Phelps' Patent Animal Trap,



FOR GOPHERS, SQUIRRELS, RATS, CATYOTES,
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This Trap, as may be seen, is of simple construction and not likely to get out of order, and very durable.

It is Very Efficient

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Choice Roses and Pot Plants of every variety. Trees and Plants securely packed to travel any distance.

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Fruit and Ornamental Trees.

The attention of every Planter, Nurseryman and Dealer is called to our large and superior stock of

Fruit and Ornamental Trees,

Grape Vines and Small Fruits,

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IN LARGE QUANTITIES, AT LOWEST RATES.

Catalogue furnished on application.

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For complete list send for Descriptive Catalogue. The above stock of Trees and Plants will be sold

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Wholesale and Retail, at the

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1858.

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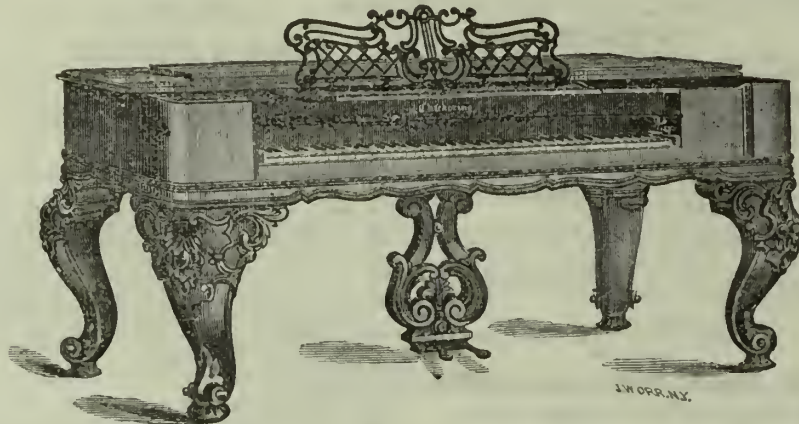
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To be unequalled. A few of them have recom-
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Examine and compare testimonials, and see if
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Brass Band and all other Musical Instruments
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POWER,
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EVENNESS OF TONE.
—IN—
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In Finish and Durability.



MASON & HAMLIN
CABINET ORGANS.

SEVERAL TIMES AS MANY
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MASON & HAMLIN CABINET ORGANS
ARE ANNUALLY SOLD,
As of those of any other maker.

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So that the examination is competent and un-
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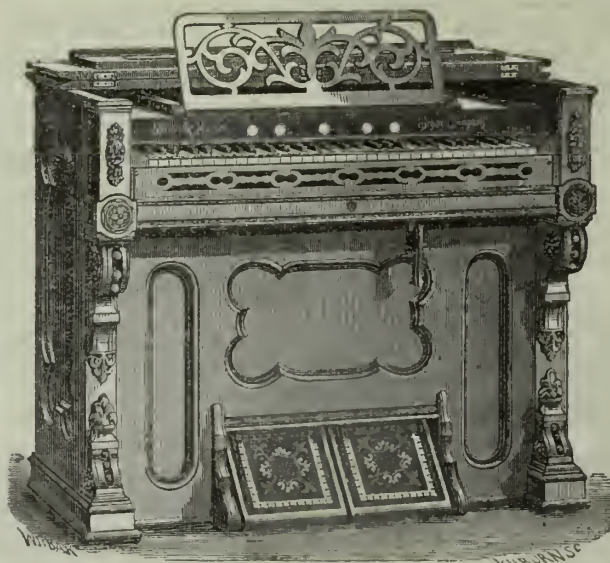
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Volume III.]

SAN FRANCISCO, SATURDAY, FEBRUARY 10, 1872.

[Number 0.

Science and System in Farming.

There is no denying this position, that the farmer who puts in his labor and time for days, months and years, through the heat and dust of summer and the mud and rains of winter, does it to make money, for very few will be found willing to labor thus, just for the fun of the thing. It is a matter then of the first importance, that the farmer should possess something of the science of farming; he should know just how to manage his farm to get the most from it, with as little loss of its permanent fertility as possible. Just as an engineer would manage his engine, to get the most power and work from it, with the least wear and tear and consumption of fuel. There is no doubt but one of the greatest hindrances to successful farming, is found in a want of system in the general management, by which a large amount of the labor employed upon the farm is lost or not skillfully applied. The eminently successful farmer must exercise his mind as well as muscle; he must read, study and then practice. It will not do in this age of improvement in everything else, for the farmer to do this or that because his father did so before him; a man to be successful now-a-days must endeavor to excel in whatever he undertakes, and he must do it, or he is behind the age, and unless he watches well the yearly improvements in farm machinery and new modes of culture, the new and diversified products constantly introduced, many of them valuable because productive of large profits to the producer, he will soon find that he is lagging behind his fellow-farmers, who with more foresight have been watching the progress of events connected with their calling.

Now as it is quite impossible for the farmer of moderate means to go everywhere, visit every place where improvements are going on and experiments in the cultivation of all the diversified products are being made in different parts of the country, it is a matter of the first importance to him that he avail himself of the experience of others, and there is no way in which he can so cheaply and completely do this, as by subscribing for and reading the standard agricultural newspapers of the section of country in which he is located.

SANTA CRUZ FARMERS' CLUB.—Our correspondent, "Quercus," sends us a full report of the proceedings of this club at their meeting on Saturday last; but the crowded state of our columns compels us to cut it down much more than we wish to do, and more than we propose to do hereafter. The chief part of the time was occupied in listening to a very interesting address from Dr. Lucky, on "Teachers and Their Wages." We regret that we are unable to give the synopsis of the lecture furnished by our correspondent. After the lecture the regular business was a discussion of the question—"How Can the Raising of the Best Breed of Hogs and the Manufacturing of Bacon and Lard be made Profitable?" The library of this club is constantly increasing, and everything betokens permanency and thrift.

CASHMERE GOAT GROWERS' MEETING.—We would call the attention of those interested in the production of the Cashmere or Angora Goat, to a notice in our advertising columns, of a meeting to be held in Sacramento on the 28th instant.

Success makes a fool seem wise.

At Anchor.

Ah, many a year ago, dear wife,
We floated down this river,
Where the hoar willows on its brink
Alternate wave and shiver;
With careless glance we viewed askance
The kingfisher at quest—
And scarce would hear the reed-wren near,
Who sang beside her nest:
Nor dreamed that e'er our boat would be
Thus anchored, and at rest,
Dear love,
Thus anchored, and at rest!

Oh, many a time the wren has built
Where those green shadows quiver—
And many a time the hawthorne shed
Its blossoms on the river—
Since that sweet noon of sultry June,



AT ANCHOR.

When I my love confessed,
While with the tide our boat did glide
Adown the streamlet's breast,
Whereon our little shallow lies
Now anchored, and at rest,
Dear love,
Now anchored, and at rest!

The waters still to ocean run,
Their tribute to deliver,
And still the hawthornes bud and bloom
Above the dusky river;
Still sings the wren—the water-hen
Still skims the ripple's crest;
The sun as bright—as on that night—
Sinks slowly down the west;
But now our tiny craft is moored;
Safe anchored, and at rest,
Dear love,
Safe anchored and at rest!

For this sweet calm of after days
We thank the bounteous Giver,
Who bids our life flow smoothly on
As this delicious river.
A world—our own—has round us grown,
Wherein we twain are blest;
Our child's first words than songs of birds
More music have expressed;
And all our centered happiness
Is anchored, and at rest,
Dear love,
Is anchored, and at rest!

Mocking Birds have been turned loose at Los Angeles with the hope that they will multiply and live permanently in the open air.

SCIONS FOR GRAFTING.—To those who have grafting to be done this spring, we would advise the immediate procurement of the scions—if not already done—of the different varieties they propose to propagate. Scions can be taken from the tree at any time after the fall of the leaf in autumn till the buds begin to start in the spring; but it is far better that they be cut before the swelling of the buds. Scions of the apple, pear and cherry, if they are to be kept long before insertion, should be cut with an inch or two of the two year old wood, tied in bundles, made even at the butts, and set in the shade with the butts in moist earth; the north side of a building or where they can be kept cool, is better than a warm cellar or green house, and they should be protected from

How Food Affects the Quality of Wool.

Wool, like every other organic structure, needs suitable food to promote a healthy growth. The necessary nutriment is conveyed by the blood to the wool, through the small cells in the skin of the animal and in which it is firmly rooted. This is why the growth and quality of the wool is greatly under our control. If the blood is deficient in those qualities necessary for its growth it is simply impossible that the wool should grow at all. The root cells cannot absorb the necessary supply of nutriment presented them unless the blood contains it; hence the necessity of the animal's food being of such a character as can supply it, or the growth ceases. A liberal supply of proper food, always secures a more rapid growth and a better texture than results from inferior food.

The only specialty that pertains to food for the growth of wool is, that it contains sulphur in considerable quantity. This is usually presented in abundance in all the clovers, and alfalfa when fed green, and the leguminous foods as beans and peas. Hence these should always make a part of the season's feeding at almost any cost where the quality of fleece is desirable. The quality of the wool is also enhanced by the softness of the skin, and nothing promotes this to a greater degree than a full supply of good food. Well-fed sheep always have an abundance of "yolk" in their wool, giving it a soft, greasy feel, and their skins seem to partake of the same quality; while this condition is never found with sheep poorly fed, because the blood being destitute of the necessary oily substance, neither the skin or wool can maintain its soft oily condition. We therefore maintain that a full supply of good food is necessary to the production of wool of the best quality.

Irregularity in the supply of food is also injurious to the quality; a considerable period of short supplies or food of inferior quality, will leave their record on the growth of the wool—easily discernible by examination of the fibre—in a harsher and weaker structure, and as these portions are less liable to stand the strain incident to manufacture, they break and thus injure the fabric, a fact which manufacturers well understand and which diminishes the value of the wool in the market, when otherwise it would pass for first quality in its respective grade. Thus, large quantities of wool every year are injured by short and irregular supplies of food, and as the principle applies equally to summer as to winter feeding, the suggestions are as timely now as at any other season of the year.

A sudden transition from the dry feed of the valleys in the heat of summer, to the fresh and green mountain pastures may work no injury to the wool; but it is when the flocks are returned in autumn to the dried up grass and pastures they had left earlier in the season, that the wool suffers in quality from the lack of sufficient wool-producing nutriment in the blood. We shall continue our remarks on the growing of wool, in our next number, showing the effect of climate on the quality and quantity of the fleece.

FENCES.—Now is the time to build and repair fences, and our farming friends will find an advertisement of a cheap, easily constructed and durable one, called the Davis Wire and Picket Fence. Read the advertisement and examine the construction of the fence.

mice or larger animals by covering them with a box or barrel; this also insures a shade, and helps to keep the scions in a good, fresh condition; and should be kept thus until wanted.

BEET SUGAR.—The Sacramento Record of the 3d says that the Sacramento Beet Sugar Company have just finished working last year's crop of beets. The product is nine hundred barrels of excellent refined sugar. The season was a very bad one. The Company will cultivate twelve hundred acres of beets this year, adjoining its Manufactory, and expect to produce at least ten thousand barrels of sugar the coming season—perhaps eleven thousand—besides several hundred barrels of excellent molasses.

SACRAMENTO VALLEY BEET SUGAR COMPANY.—This company with a view of largely extending their operations, propose to increase their capital stock—which is now \$100,000—to \$200,000, and have given notice for a meeting of the stockholders for that purpose. This does not look much like a backing down of the new enterprise, and we congratulate the stockholders of the company on their successful endeavors to place this valuable industry, on a permanent and paying basis.

THE SNOW BLOCKADE.—It is now two weeks since we have received an Eastern mail.

CORRESPONDENCE.

Deep Plowing.

EDITORS PRESS:—As the farmers will soon be breaking their corn ground, please allow an old farmer to make a few suggestions about deep and thorough tilling. The farmers on Bear river, near Wheatland, tell me that thirty bushels per acre is their average corn crop, and eighty the largest yield. Why not make eighty bushels an average crop? With three ears to a hill, that will weigh 11 4-10 oz. each, and hills four feet apart each way, it will just make it. Such a result, and often much more can easily be attained on such land as Bear river bottom, by deep and thorough cultivation.

Will it Pay?

Most undoubtedly it will, and much better than poor farming. A farmer asks—how can we farm so as to make such crops? From over thirty years experience in farming, in different States, we will try to answer that question. First—break your ground as early as possible, twelve inches deep or more, twenty inches would be far better; the latter depth is attained by trench plowing and subsoiling, (summer fallowing or fall plowing as above is better still). About the middle of March harrow and re-plew the ground in deep narrow furrows to mix and pulverize the soil. The first of April, and not later than the 20th, mark the ground in rows, four feet each way. If the soil is still too cold or damp to favor sprouting, drop the seed as high as the surface, and cover light; if warm, cover deeper, and when the corn is high enough to show the rows, replant all the missing hills and commence working with a one-horse corn plow. Plow deep and close to the corn, throwing the furrow away from the corn. In three or four days, run through with a one-horse cultivator, to level the soil and partially fill the furrows; in six or eight days more thin your corn to three stalks to the hill (if they are there) and replant the missing, then cross work as above and have no fear about working too deep or too close to the corn, provided you do not plow it up; pull the weeds from the hill and if you have time, a dressing now with the hoe will reward your labor.

When to Hill Up.

When the corn is twenty-four to thirty inches high, throw a light furrow toward the rows and plow the middle; when waist high, cross work in the same manner; your crop will then shade the ground and send out its latest roots that should not be disturbed, and your soil is thoroughly loosened and pulverized and requires no more working. Some eastern farmers level off the ground with a light cultivator before lying by, which is far from bad practice—try both. If weeds appear, they should be pulled or cut with the hoe, as they draw moisture and nourishment from the crop and make seeds for trouble in after years. Remember the earlier you get a stand the better. It will cause you more trouble early than late, and the corn will not advance as rapidly early in April as if planted late in May, but it is getting root, and if well worked will send up a thicker stalk, with larger ears and more of them, and make a better quality of grain. I have seen such farming when broken as late as the middle of March produce ninety-three bushels per acre on the Mississippi bottom, on old land, when by its side the same season with only a turn row between ordinary plowing made but twenty-five bushels, and that which was summer fallowed the year previous made a crop too large to tell so of far away from home. Such experiments are of great importance to the farming interests. Will not some of our farmers in different parts of the State, try it in a small way and report the result for the benefit of others.

The Labor Required.

Some may reasonably object, that it will take two or more times the labor usually expended. Very true, but if you are better paid and save half or two-thirds of the rent, taxes and fencing, and increase the value of your land, it still balances in your favor.

Eureka Gang Plow.

As it is possible some farmers may not know where to look for a suitable plow for such a purpose, I would refer them to Hill's deep tiller. I recently made a careful examination of Hill's Patent Eureka Gang Plow and his deep tiller, made by Hill & Knaugh, of this town. Mr. H. informs me that he has sold this season

over three hundred, while orders are now coming in at the rate of eight or ten a day. This speaks well for the great popularity of the plows, also for the business capacity of Hill & Knaugh in selecting your valuable paper as an advertising medium, to which cause they acknowledge themselves largely indebted for their extensive business; but the merits of the plows in the field seem destined to firmly hold the honors they have so fairly won. Mr. H. showed me a letter from an intelligent farmer in Colusa county—Mr. Epperson—who says: "I have tried your deep tiller in old ground and new, low land and high, adobe land and sandy, also in seed with the cutter on, and find it a success in every case; it is without doubt the best plow I have ever hitched a team to. I tried it thoroughly for three weeks before the last term. In old land four animals are sufficient to run it, new land requires six to work it with ease. I am a strong believer in deep tilling, and theirs is the first plow I ever had on my ranch that I could plow a foot deep with, right along, all day; it can be let down to any required depth, etc." Mr. E. also says it eclipses all other plows in his part of the country. The plow is well and tastefully made, strong and durable. The No. 3 gang is very staunch, and has the finest mould for general usefulness I ever saw, and is capable of working to the depth of 10 inches or less. The next size, smaller, with the moline mould, will work as deep as 8 inches and is superior for scouring in sticky soils. Several patterns of moulds are used, but I think those the most superior patterns. The Collins mould is good, yet the deep tiller stands at the head of the list for corn, and has equal merits in fallowing for small grain. The question is, who will be the public benefactors in trying the experiments on this coast that has produced such great results elsewhere, and give the benefit of their experience to the country? The experiments need not be confined to bottom lands; any deep rich loam will make good corn if well tilled, with six inches of water in the ground at the middle of May, if the crop is planted by the 10th of April. I speak from experience and close observation of my range.

S. R.

Marysville, Jan. 26, 1872.

Underdrains for Irrigation.

EDITORS PRESS:—Permit me through your columns to call the attention of the farmers of this coast to a plan for the construction of underdrains for purposes of irrigation, the cost of which will bring it within the reach of at least nine-tenths of those whose lands are in need of irrigation.

Its peculiarity consists in substituting for the tile a V-shaped trough. By placing this in the bottom of the drain with the broad part on the ground, and by having it of the same width as the drain, a passage for the water will be afforded which will be kept clear of obstructions from the falling in of the earth from above.

The boards of which the drain protector is made, may be of any width or thickness, so that its width is exactly the same as the width of the drain, and the width of one board exceeds that of the other, exactly the amount of their thickness. If the bottom of the drain is cut smooth and the fall is uniform, there will be no danger of the drain choking, unless the incline is so great as to give the water great velocity.

From the beginning to the end of a drain the incline should be uniform, for if changed at all it should be increased, for if it is diminished a pool will form and a deposit be made which will choke up the passage. In some parts of the East, drains of this kind are made for the purpose of carrying off the surplus water, by machinery constructed for that purpose, consisting of a huge coulter from two to six feet in length inserted in a beam some ten or twelve feet long and of suitable thickness, and having on the lower end a cast-iron shoe, which makes an aperture sufficiently large for a "protector" to be drawn into at the time of the operation.

Sometimes the machine is drawn by several yoke of oxen; but usually by a capstan and yoke of oxen or span of horses. On many of the wet prairies of the Mississippi valley these drains were made two feet in depth at a cost of 25 cents per rod, and I suppose that there are many places in California where this machinery might be used very profitably. Almost any one might try the experiment on a small scale, digging the trough by hand and testing the value and cheapness of a drain of this description.

JAMES I. FERREE.

San Francisco, Jan. 30, 1872.

Agriculture and Other Matters in Montana.

EDITORS PRESS:—Having occasion to pay a visit to Meagher County, the past week, I beg the privilege, as your occasional correspondent, to jot down some items gleaned during my trip to that interesting portion of our Territory. In company with a friend who sleighed from Helena to Staffordville—formerly Cañon Ferry, on the Missouri river, about 18 miles distant. The ferry appurtenances were there, but we crossed the river upon ice 16 inches thick, and were glad to arrive at the hospitable door of mine host, Capt. Stafford. Around his genial hearth we met several honest miners, sturdy ranchmen, and stockmen, who were "snowbound"—all enjoying the indoor comforts, the more pleasurable by contrast with the severe cold and deep snow without. We tarried a day and gathered much valuable information for the Press from the weather-bound visitors.

A Snowless Region.

From Mr. Weatley Basey we learned that about 900 head of cattle had been driven from the Deep Creek country—when the snow was two feet deep—to the Mussle river—where there is no snow, only about 30 miles distant eastward. About 1,100 remained, and the ranchmen were proposing to remove the remainder to that section.

It is passing strange that whilst all over the Territory so much snow has fallen and now lays upon the ground, about two feet on a general level, that the portion of country alluded to extending over many miles, should be exempt. The bunch grass was 18 inches high, seeded, and nutritious, and thousands of cattle could be wintered there, safe from the voracious wolves, and in danger only from the possible appearance of vast herds of buffalo which were in the Judith basin, or might at any time cross the range to that inviting pasture.

Desirable Locality.

The captain has one of the most inviting, romantic, and profitable locations in Montana. It is the concentrating point for the miners and ranchmen; whilst, as he informed us, 30 or more strangers have found comfortable beds with him during this present "cold spell." He will have a new wire rope soon, to span the river—which is 500 feet wide just below the cañon. We noticed two or three yoke teams busy hauling saw-logs to the mill from the adjacent hills—which gives employment to a dozen or more men, chopping timber. When they came in at night they seemed to be men of

"Happy yesterdays, and confident to-morrows."

The cackling of hens, cooing of pigeons, squealing of numerous swine, and lowing of the herds as they come in from the foothills, reminded us forcibly of Gray's celebrated elegy, and, altogether, presented a picture of this far-off mountain country, which in comfort and pleasantness would not suffer by comparison with any portion of our highly-favored land.

We were also informed that the Trout Creek Ditch, which has been in progress for the past two years, will surely be completed early this spring, and will give employment to a large number of miners, as it is estimated that at least 600 acres of bench placer mining will be brought into productiveness. The capacity of the ditch is 1,000 inches, and length 14 miles.

After the warm parting greetings and a "sleigh cnp," the next morning, early, with sleigh-bells jingling, we dashed off up the valley. The snow outside of the well-beaten tract was about 2½ feet deep. We passed several ranches on the way; the houses were comfortable looking, and around the large ricks of hay and straw-stacks the cattle in great numbers were grouped, seeming to be well cared for.

Blackwell's Station or Glenmore.

After a two hours drive of twelve miles over the crisp snow, we arrived at the hospitable home of the Messrs. Blackwells—Glenmore, we named it, formerly called Blackwell's Station. Here, in the winter time, all travelers, belated or otherwise, find all the comforts of the aristocratic English farmer's warm welcome, with fire places as large as their hearts, cosy beds, groaning tables, and a welcome so hearty that the frost at once melts from our beards and we indeed feel "at home."

This rancho needs more than a passing notice. About five years ago four poor English boys with their aged parents settled here, and have, by their own industry and energy, now an inviting home and the largest and most productive farm upon

the Missouri valley. The land lays just along the foothills which here are very precipitous, and extend outwards and along the high bench of land overlooking the river from a distance. It is watered by White's gulch. The system of irrigation adopted here is the most complete we have seen. They have about 200 acres in cultivation and will add more next year; they had 80 acres in wheat, which yielded 30 bushels to the acre; the wheat is the Chili and Club wheat, and makes splendid flour. It is perfectly free from smut and every other impurity. Their oat crop yielded 40 bushels to the acre and weighed 40 lbs to the bushel, and is of the "Surprise" variety. The grains are almost as large as the celebrated Montana rye. Their potato crop yielded 200 bushels per acre.

The stock upon this farm looked better than any we saw, as they had good shelters and an abundance of hay and straw. The horses and cattle have lived for the most-part upon the bunch grass growing upon the steep declivities of the hillsides.

In my next letter I will write about matters, etc., in and about Diamond City.

EAGLE QUILL.

Helena, Montana, Jan. 17, '72.

Early Tomatoes.

EDITORS PRESS:—For many years our farmers have been endeavoring to hit upon some plan for the production of early tomatoes. As yet, no successful movement has been made in that direction, and as a consequence, we are annually chagrined with the fact that, with all our boasted fertility of soil and geniality of climate, Sacramento succeeds in getting tomatoes to market a full month in advance of us. This fact is still more unpleasant on account of its financial significance. When tomatoes first make their appearance, they readily sell from seventy-five down to twenty cents per pound, and we have only to stand by and see our Sacramento neighbors reap the golden harvest.

It has been asserted as a somewhat novel phenomenon, that upon the southerly sides of the hills east of San José, there is a belt of land just below where the snow line appears, in our coldest seasons, where frosts never occur. Now, if there be such a belt of land in that region, totally exempt from late frosts, why would it not be just the place upon which to plant early tomatoes? The hint is worthy of consideration, for, if any one can succeed in getting tomatoes to this market, or to San Francisco by the 20th of June, his fortune is secured. The region of country alluded to is easy of access, can be abundantly watered by irrigation, and it is to be hoped somebody may give it a test this spring.

QUERCUS VIRENS.

A New Manure.

A Norwegian company offers for sale a fish guano from the Loffoden Islands, prepared from the heads and backbones of the cod-fish, collected during the great winter fisheries off the Norwegian coast, principally by children and old and infirm persons who have no other means of subsistence. Formerly this matter was thrown into the sea as refuse, and materially affected the permanence and efficiency of the fisheries; but it is now carefully collected and hung in bundles on the rocks to dry. In June and July it is brought to the mills, where it is cut into pieces, dried artificially, and then ground between mill-stones. This article, prepared quite differently from the fish guano of the United States, is put in bags, and finds a constant demand at about \$45 a ton. It contains a great variety of ingredients fitting it for an excellent manure.

Fish Flour.

The same company furnish what they call fish flour, which is made from the best dried codfish by grinding them up, bones, skin, and all, to the fineness of sawdust or flour, in which form it is largely used in Scandinavia for various kinds of cookery. It is sometimes mixed with potatoes or other substances, and sometimes formed into cakes or biscuit. The fish is more readily packed and transported in this form than any other, and it is said to keep a long time without deterioration. We would commend this last-mentioned preparation to the attention of our people, as furnishing a hint toward a new article of trade in this country, and one that could be conveniently employed in cookery in a great variety of ways.

MECHANICAL PROGRESS.

Friction Gearing vs. Belts and Cog Wheels.

Experiments in the use of friction gearing—that is, of pulleys transmitting power, by direct frictional contact between the smooth faces of the driving and the driven pulley instead of by means of belts or by cogs meshing into each other—have been very frequently made, and in many cases with remarkable success. So emphatic are the recommendations of this method of gearing, given by men who have tried or witnessed its operation, that it is somewhat a matter of surprise that it has not been more generally adopted. It is claimed by many such persons to be equally well adapted to the propelling of gang, mulay or circular saws, mill burrs, or in fact almost any description of machinery, and to the transmission of any amount of power with the same or even greater useful effect than when belts or cog wheels are employed.

In the vicinity of Clinton, Iowa, some years ago, friction pulleys were introduced in a saw-mill with such complete success in point of economy and convenience, that they soon became an established institution throughout that entire region, superseding belts altogether, the latter being in some instances thrown out at a heavy expense to give place to the new order of things.

The pulleys used in this case were built of soft and tough wood, strongly put together by their segments in such a manner as to present the least possible end grain of wood to the surface. They were placed on the main shaft, to which the power was applied by the engine crank or taken from the water wheel, as the case might be, in the ordinary manner. The faces of the pulleys were either parallel to the shaft or beveled at any angle required, according to the direction of the counter shafts to which the power was communicated. The segments of the pulleys were glued or painted together and their faces turned off perfectly true. It was found that they required about one-third more width of face than would be necessary if belts were used. In one case, two gangs were run, each with a friction pulley three feet in diameter and having 24 inches face. For a mulay or rotary saw mill, a pulley of from 12 to 16 inches face was found sufficient. A friction pulley, ten inches in diameter with six-inch face, was described as giving more useful effect and heating the boxes less than when the same pulley was used with a four-inch belt. From the numerous experiments made, the conclusion was reached that a pulley of 20 inches face would successfully transmit 50 horse power without undue wearing or heating.

The special advantages claimed for this method were the saving of the expense of providing belts and loose pulleys and keeping them in repair. The mills were so arranged that each machine was run with its own counter shaft, geared either to the engine shaft or to one of the main counter shafts so that each workman could control the operation of his own machine independently of the others, and with no throwing off or putting on belts. The pulleys on the counter shafts were of iron and very strong, each having the same face, of course, as the driving pulley, but being of any desired diameter, according to the motion to be obtained. By means of a movable bearing operated by a lever, the iron pulley was readily brought in contact with its driver, the motion necessary for this purpose being less than one-eighth of an inch.

The statement that, for the proper working and durability of a friction pulley, it should be so made as to present as little end grain as possible to the surface, is emphatically disputed by experienced workmen, who claim that the precise opposite to this is the true method, and that the pulley should be so made as to offer the end grain to the contact of the other pulley to the utmost practicable extent.

To accomplish this purpose, the pulley is made of segments of wood, cut out of a plank in the shape of a fan, the grain running parallel with one side of the fan, and the end grain being represented in a slightly oblique manner at the outer or circular edge. These segments are put together strongly, and so arranged that the grain shall not run in the same direction in two pieces in contact with each other, but cross in much the same manner as the furrows in the upper and under millstone. The object of this is to prevent the face of the pulleys from too great tendency to wear in any given direction.

The rim of the wheel, as it may be called for convenience, is built up by laying the first tier of segments, making a complete wheel of the thickness of the plank, flat upon the bench, and placing the other layers successively upon this, breaking joints and crossing the grain as already indicated. The layers are very strongly secured to each other with wrought nails, beside which glue or white lead is laid on between them. The rim being complete, mortises or gains are made to receive the pads of the spider at the end of the radial arms, these gains being somewhat larger than the pads, and the space thus given being filled by the insertion of keys, one on each side of the pad, entering from opposite directions and overlapping each other, the whole length of the pad. Bolts are also inserted, passing through the pad in a radial direction, with countersinking on the face of the pulley and a nut on the inner end. The countersink is afterward filled by plugging, over the head of the bolt.

The conflict of testimony in regard to the comparative efficiency of the pulleys in which the end grain is presented to the surface and those in which it runs lengthwise with the circumference is somewhat surprising, as the point is easily subjected to a practical test. Most mechanics will take ground without hesitation in favor of end grain, as less liable to yield and curl or "broom" up, when subjected to powerful and constant pressure.—*Leffel's Mechanical News.*

ROLLING IRON.—Nothing is more noticeable than the various changes which have been made in the method of finishing iron in rolling mills during the last five years. A few years ago our mills furnished all their iron in bars, sheets, rails, or such shapes as were demanded by separate establishments. Of late the iron manufacturers have added to their mills other branches of iron working, which can be done by them at much less cost than by those who were simply purchasers from the mills, and who lost considerable in the shape of "scraps" in working up the iron in various articles. Said "scrap" was necessarily brought back to the mill again and sold at a greatly reduced rate. Thus it will be seen that the rolling mill that finishes the iron direct into nuts, bolts, horse shoes, washers, railroad chairs, etc., possesses a great advantage in making these articles, which are beginning to be viewed as a part of the rolling mill business. Galvanizing sheet iron, making gas pipe, strap hangings, and many other things are now made by rolling mills with more profit to themselves and the public, than by the old method. Properly managed, the finishing of iron into these and other articles cannot fail to prove profitable to the manufacturer.

TESTING COTTON GINS.—A series of interesting experiments have been proposed at Manchester, England, for the purpose of testing the merits of the various cotton gins, for working different kinds of cotton, or separating the fibre from the seed. The points to be determined for each gin, and in respect to each variety of cotton are:—First—the speed of working, as tested by the time in which a given quantity of seed cotton can be ginned; second—The facility of working as tested by the quantity of power consumed in the operation; third—The quality of working, as tested by the condition of the ginned fibre and the separated seed respectively. In order to make the experiment as conclusive as possible a series of very ingenious regulations have been framed to exclude the possibility of any kind of error or deception. Three principal classes of gins have been entered for competition namely, the roller gins, knife and roller gins, and saw gins. Such tests might be made with many other kinds of machinery, much to the advantage of the public and to all really meritorious inventors.

AERATING WATER.—A contrivance of recent date for aerating water produced from the condensation of steam, comprises a tank with a series of porous or open work partitions, some containing wool and felt, with the spaces between filled with coke and chalk. The last compartment has a perforated bottom, through which air is forced and rises in minute bubbles.

FROM an interesting article in a recent issue of *London Times*, we learn that steam cultivating machinery is coming into very general use in England. One large firm have been sending out from eight to ten plowing engines per week, most of which are for use in districts where they can be hired by several different farmers.

SCIENTIFIC PROGRESS.

The Permanent Gases.

It is a generally received opinion that all gases are mere vapors of liquids that boil at very low temperatures. Thus, while water boils at 212°, common ether boils at 96°, and sulphurous acid at 0°. Consequently, while water is always a solid or a liquid, in all parts of the earth, ether would be a permanent gas in any place where the highest tropical temperature prevailed, and sulphurous acid is always a gas except in the cold of the polar regions. Even mercury, when exposed to a temperature sufficiently high, becomes transparent gas, and carbonic acid gas, when exposed to a temperature sufficiently low, becomes first a yellowish liquid, and then a beautiful, snow-white solid. The only difference, then, between common snow and carbonic acid snow is that the one is much colder than the other, while, on the other hand, the only difference between carbonic acid gas and mercury gas is that the one requires a higher temperature for its existence than the other.

There are certain gases, however, which no degree of cold yet reached has reduced to the liquid, far less to the solid form. Prominent amongst these are oxygen and hydrogen—the gases that, combined, form water. But after it had been observed that intense cold tended to reduce all gases and vapors to the liquid form, these gases were cooled with freezing mixtures; still they remained in the gaseous state, although mercury became solid, and alcohol, unless very pure, became thick and pasty. After a time, a still more powerful freezing mixture (liquefied laughing-gas) was discovered, and by a powerful steel pump was forced into a large iron receiver until it became liquefied with the pressure. When a little of this liquid was poured into the air, it evaporated, and produced the greatest degree of cold ever observed—257° Fah. Even then, oxygen and hydrogen did not liquefy, but maintained their condition as clear and beautiful gases.

But cold alone was not the only agent brought to bear on these gases. They were subjected to immense pressure, far exceeding anything with which we are familiar in ordinary life. Natterer constructed a series of very finely made steel pumps. With one of these, he condensed one of the gases into a strong vessel until it occupied but the three-hundredth part of its original bulk. Then, with a still more powerful pump, he condensed this already dense gas, so as to reduce it still further. It will readily be seen that, by employing gas in a condensed state, it was much easier to force it through the valves of the second pump than if gas at the ordinary pressure had been used. In this way, by working with gas gradually increasing in density, he finally obtained a pressure of 3,000 atmospheres, or 22½ tons to the inch.

If we have no idea of a temperature of 257° below zero, neither can we fully grasp the enormous pressure expressed by the figures 22½ tons per square inch. Most solid substances would be crushed to powder under such a pressure as this. And yet to this wonderful pressure did Natterer subject oxygen and hydrogen. But even that temperature and pressure made no impression on them, at least so far as change of form is concerned.

But that which Natterer, aided by all the resources of modern science, failed to do, chemical affinity does instantly and perfectly. Mix the gases in proper proportions and bring the smallest flame into contact with them, so as to produce ignition, and they will instantly rush together with a loud report, combine and form a perfect liquid, water. It is perfectly obvious that the elementary atoms of this new liquid water, must be held together by a force sufficient to overcome their expansive force. We have seen what this expansive force is capable of resisting, and consequently we can form a comparative estimate of the power of chemical affinity.—*Condensed from Pin's Chemical History.*

VOLCANIC ERUPTIONS.—Archdeacon Pratt, by discussing the amount of precession in a globe with a molten nucleus, finds conclusive evidence of Sir Wm. Thompson's opinion that the earth is solid, and that, therefore, volcanic eruptions are attributable to some other cause than the one popularly assigned. His view is confirmed by numerous recent observations, which indicate that the increase of temperature, below the earth's surface, soon reaches a limit.

THE SAND BLAST.—The uniform success which has attended the use of the sand blast has sufficiently proved its reliability, and the numerous purposes to which it can be applied, promise to render it one of the most useful inventions that have been of late brought into public notice. By simple modifications it can be made to supersede the present slow and costly process for shaping granite and other hard stones, for rock drilling and for polishing castings, or grinding and engraving glass. The cost of working it is extremely small and there need be no loss of the sand employed, as it can be constantly restored to the feeding hopper, together with the particles driven from the material.

The action of the sand upon a hard surface appears to be due to the work performed by each angular particle that strikes, and which in striking carries away with it a particle, of course far smaller than itself, and the reason why the softer materials resist the wearing action, is due to the elasticity which repels the particles. As a proof of this, it may be mentioned that while perforated shield plates of lace, gelatine, or rubber bear a prolonged exposure to the sand, unharmed, stencils of thin sheet steel or brass curl up, and are destroyed.—*Engineering.*

THE PNEUMATIC SEWAGE SYSTEM in which air is the power employed for cleaning the sewers of matter otherwise likely to accumulate, is discussed with much interest by some of our foreign exchanges. The plan is to divide a city into complexes and sub-complexes, a sub-complex consisting of about 200 houses, and a complex comprising all the sub-complexes within a radius of 2,500 feet. Each complex has a large air-tight cast iron reservoir, and each sub-complex a small one connecting with the main reservoir and with the houses, by means of pipes provided with valves and cocks, by which all circulation of air may be prevented. The air inside is exhausted by means of a large air pump driven in connection with the main reservoir by means of a powerful steam engine, and then the outer air, pressing upon the contents of the pipes, forces them into the reservoirs. By this means the pipes may all be cleared in less than five minutes, their contents first passing into the sub-reservoirs, and then into the main one. This simple and eminently sanitary system has for some time past been in successful operation in the city of Prague, Bohemia, and is being introduced into other European cities.—*Exr.*

ACCURACY OF TELEGRAPHIC ESTIMATES OF LONGITUDES.—The great accuracy with which differences of longitude can be ascertained by the magnetic telegraph is illustrated by some of the determinations for the United States Coast Survey. Where the longitudes were estimated by four different circuits, the greatest difference between any two determinations was twenty-eight thousandths of a second, equivalent to about thirty feet, the mean error being less than one millionth of the distance between the two objective points, which, in some cases, as in that between Cambridge and San Francisco, was 3,580 miles.

NEW USE FOR ELECTRICITY.—Electricity has achieved a new triumph. Already employed to restore vigor and nimbleness to the gouty limbs of decrepit *bons vivants*, the recent discoveries of Dr. Bernier, a French physician, show electricity to be an efficient remedy for the evil effects of excessive drinking on the human nose. The doctor maintains that, by the application of an electric current to noses even of the most Bacchanalian hue, the flesh may be made "to come again as the flesh of a little child;" and he supports his assertion by a case performed on a female patient of his own, a woman of high rank.—*Sci. Am.*

THE FOSSIL PLANTS OF CANADA.—Dr. J. W. Dawson, of the Geological Survey of Canada, has just published his report on the fossil land plants of the Devonian and Upper Silurian formations of Canada. In this report, he has catalogued or described more than 120 species of land plants found in formations older than the carboniferous in Canada, thus placing the knowledge of this old flora in advance of that of any other portion of the world.

A NEW MODE OF FORMING PERFECT CRYSTALS.—Prof. Schultze states that by the use of gelatinizing liquid as a solvent, crystals of various substances may be obtained completely formed. In proof, a number of fine crystals of sugar, borax, etc., were shown, which had been formed in suspension in gelatine and other solutions.

HORTICULTURAL.

The Olive and Its Culture.

It is a matter of surprise that more attention has not been paid to the cultivation of the olive in California. The noble specimens of this tree growing at several of the missions fully attest the admirable adaptation of our soil and climate to its growth, and the superior quality of the small quantities of oil produced here, prove that the fruit matures in California in its highest degree of perfection. The annual value of the olive crop in the countries bordering on the Mediterranean is, not less than \$100,000,000, and large quantities of both the fruit and oil are imported and consumed in the United States. So great is the demand for the oil, and so high its price, that probably more than half of all which is consumed in this country is spurious, and of course inferior. The introduction of a pure article, carefully manufactured, would greatly increase its consumption, and in this production there is evidently a large field open for the increase of the material wealth of California.

Use of the Oil.

With us the use of olive oil for food is mainly confined to dressing salads, etc.; but in Europe, it is largely employed for most of the purposes for which we use butter and lard; while the inferior qualities are consumed in large quantities for burning, oiling machinery, etc. For most of the uses to which lard is applied it is much preferable and more healthful than that article. For cooking fish, it is unequalled, and for want of it, or on account of its high price in many parts of Europe much fish is fried in colza, poppy, sunflower seed and other oils. It is considered the best material which can be employed in preparing wool for manufacturing purposes.

Its Cultivation in California.

Santa Barbara appears to be the portion of the State where most attention is just now paid to this branch of horticulture. According to the Surveyor-General's report there are 34,504 olive trees growing in that county; 2,000 in Los Angeles, and only 1,982 in the other counties of the State. Just one-half the counties of the State (25) report olive trees growing within their limits. Only a few hundreds of the trees above enumerated have yet come into bearing.

Varieties and Their Characteristics.

Du Breuil enumerates some 15 varieties cultivated for the oil, and 7, the fruit of which is used in pickling. These varieties differ in the form of the tree, its hardiness, productiveness, and its adaptation to different soils. The fruit also varies in shape, color, flavor and the quality and quantity of oil it produces.

Baron Von Mueller, Superintendent of the Botanical Gardens at Melbourne, a province where much attention is now being paid to the culture of the olive, recommends the following varieties:

1. Verdale—Available for a good table oil, as well as for green conserve. This, and the next following, are early and abundant bearers.
2. Blanquet—Adapted for dry ground. The oil is of a particularly sweet, delicate taste, and more pale than any other kinds, but does not keep so long. This and the Verdale produce the fruit on low-growing branches, so as to be accessible for hand picking.

3. Bonquetier—for superior oil.
4. Redonnaou—Eligible for colder regions; produces table oil, and is also esteemed for conserves.

Some other kinds are locally available, among them the Olivier de Grasse, the latter yielding an excellent table oil, and oil for perfumery, but the plant is high of growth, and the gathering of the fruit more expensive; it is of a weeping habit.

We are unable to give the names of the varieties which are cultivated in this State; but there is no doubt that careful attention should be paid to this particular. The history of the introduction of every variety of fruit and berry into this State abounds with numerous and often disastrous losses from inattention to this particular.

Mode of Propagation.

Propagation of the olive may be affected in all the various ways—by seed, cuttings, layers, root cuttings, grafting, etc.; indeed there are few trees which are so easily multiplied. When seeds are sown for stalks

upon which to graft, they should be soaked in strong lye before planting, else the oil will generally prevent the access of water to the germ until the second season.

Cuttings may be made of branches of from one-half to two inches in diameter. Mr. Mayhew of Santa Barbara, gives the following as his experience in growing from cuttings:

"I obtained 500 cuttings, from 1 to 3 inches in diameter, and about 15 inches long. In February, 1868, I put them in the ground so that their ends were little above the natural level of the ground, and covered them by making a little mound. About one-half of them started that spring, and are now from 10 to 13 feet high, and spread about 7 feet, the trunk of the stalk being from 2 to 4 inches through. Some of the cuttings were dormant through one season, and started one year from the time they were planted, and a few sprouted even two years from the time of planting, which are doing well."

In planting cuttings all the buds should be allowed to grow the first year, and the second year, all but one—the strongest—should be removed. To insure an upright growth it should be securely staked until the fourth year. Full-grown trees should not stand nearer together than 25 feet each way.

A curious protuberance or knot forms on the stem of the olive—an aggregation of undeveloped buds. These may be cut off and planted like cuttings, or rather like bulbs, which they more nearly resemble.

There is a species of wild olive, commonly called "Devil Wood," (*Olea Americana*) which is found in the Southern Atlantic States, which has been recommended there as furnishing a very desirable stock on which to graft. It is said that even the young shoots of the olive will endure a cold as low as 25° F., while it requires a temperature as low as 12° F. to kill the tree.

Yield of Oil.

The olive in this State comes into bearing at six and eight years. At Santa Barbara a single tree ten years old has yielded 60 gallons of oil—eight gallons of the fruit being required to produce a single gallon of oil. Mr. Mayhew of that place, who has had considerable experience, thinks it safe to count on a net annual yield of \$240 per acre from an olive orchard ten years old, and that the cultivation of the tree would be profitable for fuel even, so rapid is its growth. Olive oil, of a good quality, sells in California for from \$4 to \$5 per gallon. In a future number we shall describe the process of extracting the oil.

Sacramento Farmers' Club.

This association met on Saturday, Dr. Manlove in the chair.

The Committee on roads reported progress and were granted further time.

W. M. Haynie read a valuable essay on beet sugar culture, and the same subject was continued for further consideration next week.

Several specimens of apples were presented, out of which grew the following discussion:

On the Best Mode of Keeping Apples.

Mr. Rutter.—Some three years ago I gathered a number of varieties of winter apples, and, as is my custom, laid them in piles under the trees, to remain there until about the time the rainy season would commence. Some of them became covered with earth, and in the spring I plowed my orchard and plowed up the apples. The Newtown pippins were well preserved, while the other kinds were decayed. My experience is that apples can be kept in this country in piles under the trees, merely covered with clean straw, but otherwise exposed to the weather, better and longer than under cover.

Reed.—I do not agree with Mr. Rutter upon this point. Apples will keep better in a cool and even temperature, but should be protected from the rain and warm weather.

Hoag.—Many persons in this State pack their winter apples in clean sand in boxes and allow the boxes to stand open so that the rain runs through them, and take them from the sand as they want them to use. This mode of keeping is found very successful—the fruit retaining a fresh, juicy condition and natural pleasant flavor better than if kept in most any other way.

Holland.—My cellar is under my house. The house stands up from the ground so that the cellar is about half below and half above the natural surface of the ground. While apples soon decay in my chamber, they keep well in this cellar.

Harbison.—Apples should never be piled on old boards or other impure material while sweating, as while undergoing this process they inhale any impurities that are near them, and thus the flavor of the fruit is ruined.

Reed.—In my opinion fruit never sweats. Fruit picked from the tree, and boxed or piled

together, gathers dampness; but this is the condensation of the moisture from the atmosphere—it does not come from the apple. As an evidence of which the dampness on the surface of the fruit is without flavor—if it came from the fruit, it would partake of the flavor of the fruit itself.

Harbison.—Fruit inhales and exhales moisture. As a proof, it is affected by the peculiar characteristics of any material near it. It will taste of the boxes, if made of resinous or spicy lumber; but it only exhales the water, not the juice of the fruit, consequently the dampness on the surface is tasteless.

Manlove, Haynie, Johnson and Greenlaw agreed with Harbison—that the dampness came from the fruit itself—but all agreed that fruit would keep or ship much better if allowed to pass through the sweating or dampening process before the final packing either to keep or ship. Of apples exhibited—grown in the valley—all agreed that the Newtown pippin is the most valuable as a winter apple; the Swaar next and the Rawles jennet next. Of those from the mountains the Esopus Spitzenburg had the preference, and the Winesap was given the second place. It is understood that a large variety of winter fruits will be on exhibition at the next meeting. All are invited to bring in specimens and have them sampled and named. To show the value of these exhibitions, a number of those present knew the Swaar under the name of the Newtown pippin, and others knew the Rawles jennet as the Kentucky jennet. These comparisons and discussions will correct these errors and give uniformity of names.

Dr. Manlove will at an early day read an essay on grapes for special purposes, and Rutter on the red lands for fruit culture. Johnston and Greenlaw will next Saturday each read an essay on how to make fruit culture pay. The club adjourned to Saturday next, at the same place, at 1 o'clock P. M., when all are invited to attend.

Angora or Cashmere Goats.

EDITORS PRESS:—Great interest is felt in the development of the Angora or Cashmere Goat enterprise, and the question is often asked, how long will it take to produce a grade of goats that will do for shearing, by breeding the female goat to pure Angora bucks? In answer, I submit the following scale as a solution,

Showing the Yearly Increase,

And the different grades, for five years, of common female goats bred to pure Angora or Cashmere bucks, allowing them to have kids once a year, and one kid at a birth; one half of the kids to be females, and they to have young when one year old, and so on for each successive generation.

I will take the number thirty-two (32), that being the smallest number that will admit of the various subdivisions for that period, and will assume that they have kids on the 1st day of January, 1872. This will give us the following result:

Date.	Native Ewes.	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	15-16	31-32	63-64
Jan. 1, 1872.....	32	32	.....	.....	.....	.....	.....
" 1873.....	32	16	.....	.....	.....	.....	.....
" 1874.....	32	32	8	.....	.....	.....	.....
" 1875.....	32	48	24	4	.....	.....	.....
" 1876.....	32	64	48	16	2	.....	.....
" 1877.....	32	80	80	40	10	1	.....
Totals.....	192	240	160	60	12	1	.....

Shearing when One Year Old,

And from and inclusive of $\frac{1}{4}$ up, it will be seen from the scale that the first fleece will be clipped in the spring of 1875. It will be perceived that I have somewhat encroached on the year 1872, as I have made no allowance for gestation, (five months), but I have allowed for only one kid a year and one kid at a birth, while it is well known that the common goat will have kids almost twice a year, and generally two and frequently three at a birth, so that practical results will go beyond, rather than fall below my estimates. Hence, to find the increase and grades of a flock of any number of which thirty-two is a factor multiply the figures of the foregoing scale by the other factor.

Example.

Suppose you have 256 female goats, multiply the figures in the scale by eight you have the result. Again, it is asked, will they be profitable? To this I answer, yes; and submit the following estimate: Taking a flock, say, 384 common ewes, and applying the foregoing rule of increase gives us the following result:

Date.	Native Ewes.	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	15-16	31-32	63-64
Jan. 1, 1872.....	384	384	.....	.....	.....	.....	.....
" 1873.....	384	192	.....	.....	.....	.....	.....
" 1874.....	384	384	96	.....	.....	.....	.....
" 1875.....	384	576	288	48	.....	.....	.....
" 1876.....	384	768	576	192	24	.....	.....
" 1877.....	384	960	960	480	120	12	.....
Totals.....	2304	2880	1920	720	144	12	.....

Now, as one-half of the above figures

represent wethers, and as it would not be profitable to keep any of a lower grade than seven-eighths for wool, I propose to

Dispose of All Below That Grade

For mutton, average price three dollars per head, to be sold when one year old. This would give for first sales in the spring of 1873, 192 head. I also propose to shear all beginning with seven-eighths and running up, to be shorn when one year old, average fleece four pounds; average price per pound one dollar. This gives the first wool in the year 1875 (96 fleeces). For convenience I will place in tabular form:

Date.	A	B	C	D	E	F
Jan. 1, 1872.....	768	.....	.....	.....	.....	268
" 1873.....	1344	192	864	.....	576	1152
" 1874.....	2208	288	1152	.....	864	1728
" 1875.....	3504	384	1440	384	1636	2640
" 1876.....	5448	480	1728	1728	3168	4104
" 1877.....	8304	576	4896	6024	6444	.....
Totals.....	8304	1820	5760	7008	12768	6444

The column "A" shows the total number in flock before disposing of wethers for mutton, "B" yearly sales of mutton, "C" yearly receipts from sales for mutton, "D" yearly receipts from sales of wool, "E" total yearly receipts from sales for mutton and wool, "F" total number remaining in flock after disposition of wethers, for mutton.

The Price of Wool

I have put much below all estimates, and yet it amounts to the sum of \$7,008; to which add receipts from sales of mutton, 5,760, and it gives total cash receipts for five years the sum of \$12,768. To this add the value of the flock on hand, 6,444 head, at, say, \$5 per head, gives the sum of \$32,220, and a grand total of \$44,988.

In the Foregoing Estimate

I have made no estimate of the value of the pelts, which are so well calculated to take the place of wild furs in the manufacture of robes, ladies' furs, etc., and for which there is now a steady and increasing demand.

In View of the Foregoing,

And also that nearly all of our valley lands are appropriated to the cultivation of grain and that we have in our foothills and mountains thousands of acres of wild lands that will be open and uncultivated for time to come, that are peculiarly adapted to the habits, and successful growth of this animal, does it not offer greater inducements for investment of small capital than any other enterprise?

N. GILMORE.

El Dorado, Eldorado Co., Feb. 5th, 1872.

BUTTER MAKING.—The following sensible rules for making good butter have been stated and restated but as they are short and pertinent to the season, and fit to refresh the recollection, we give them place:

"1st. Perfect cleanliness in everything from the milking of a cow to packing the butter down.

"2d. A dry and well-ventilated room is which to set the milk, at a temperature of from sixty to sixty-three degrees.

"3d. Cream not to stand over thirty-six hours—twenty-four is frequently better—in winter and in summer, twelve or eighteen hours in most dairy-rooms.

"4th. Stir the cream, and add a little salt at each time of skimming the milk.

"5th. Churn often; twice or three times a week is better than only once.

"6th. One oz. of salt to a pound of butter will more nearly suit the average taste than a larger or smaller quantity."

COLTS INJURED BY HEATED MILK.—A correspondent of the *Rural Home* says:—When the dam is used in hot weather upon the farm or road, so as to heat her blood, the colt should never be allowed to suck until she has fully cooled off. Let him fill himself before the mother is put into the harness, and if it is important that he should accompany the dam, tie him at her side so that he will be unable to draw milk until he is liberated; for it is much better that he should go hungry a few hours than to take his food while it is in a fevered state. If the mare is to make a long distance in a hot day, and return at night, it is best to leave the colt at home; and draw the milk from the udder by hand once or twice during the day, and then upon returning allow the colt to fill himself gradually as the milk is secreted.

PRESERVE THE BEARINGS.—A tree transplanted should be set in the same position in which it stood before taking up. That is, the side of the tree that faced the north before it was taken up, should be placed to the north when it is re-set.

An Indiana editor says:—"We leave tomorrow for the county hog show and hope to take the first prize."

AGRICULTURAL NOTES.

CALIFORNIA.

AMADOR COUNTY—*Ledger*, Feb. 3: At this time, when obstacles are being thrown in the way of mountain agriculture, it might not be amiss to state a few facts in relation to the value of mountain lands for agricultural purposes, and what these lands are capable of yielding under proper cultivation. There is a small piece of ground, not exceeding four acres, under cultivation, situate on Jackson creek, in this county, that well illustrates our subject; this land has been tilled for the last twenty years, and is cultivated to vegetables, grapes and fruits; it is owned and worked by six men; from this small space of ground, from one to two horse wagon loads of vegetables, fruits and grapes in their season, are daily sent to the markets of the county, the vegetables fresh from the ground the year through; not less than 375 loads are sold annually, averaging \$15 per load, equal to \$5,625 per year; 800 gallons of wine manufactured and sold on the premises, realizing \$600; making a total of receipts from four acres \$6,225, or at the rate of \$1,556.25 per acre, besides ten persons being supplied with vegetables, fruit and wine, not included in the above sum, as also three cows and four horses fed from the products of this small spot of ground. Can valley cultivation exceed this?

CONTRA COSTA—*Gazette*, Feb. 3: The past two or three weeks of fine weather have been improved by the farmers, but the grain seeding in this district is not yet half completed. Three weeks of fair weather are yet needed, and should we have now, as there is reason to apprehend from the direction of the wind and cloudy sky, any considerable fall of rain, it will extend the seeding season into April, on much of our land.

EL DORADO—*Democrat*, Feb. 3: From all the information we can get from the different sections of the county, the prospects for good crops of grain and fruit have never been better. There will be more land seeded in wheat than any former year, and as many of our farmers have adopted the plan of summer-fallowing, good crops are assured. We have never heard of a failure to raise a good crop on summer-fallowing ground in this county. With good crops of grain and fruit, and a flouring mill right here at home, our people will be less dependent on outsiders.

FRESNO—*Expositor*, Jan. 24: From every section of the county with which we have had communication, we learn that the crops are looking finely, and the farmers are greatly encouraged at the prospect. The weather during the past week has been very favorable to the growing crops. Many farmers are still plowing and planting, feeling assured that if there is not a sufficient quantity of late rain to insure full crops, there will still be enough to make hay, and that commodity always brings a good price in this section of the country.

SEEDING.—Along the San Joaquin river above San Joaquin City, the farmers are making every effort to seed every possible acre in wheat. At every boat landing dozens of teams are in waiting for their loads, and the moment the grain is landed it is loaded up and hurried into the country.

LOS ANGELES—*News*, Jan. 27: Parties from the vicinity of Anaheim, speak very encouragingly of the farming prospects in that section. Members of all trades and professions have, temporarily, set everything aside for the ploughshare and harrow, and with a good will and strong faith in the promising indications of a prosperous future, are staking their all upon the harvest results of the present sowing season.

Farmers in the Santa Anna Valley are very busy plowing the ground and sowing it with grain. Fifteen gang plows are engaged in the work, and one-third of the valley is already plowed up. Every available acre in that section will be put under cultivation this season.

COLD WEATHER.—Night before last was the coldest of the season, and ice formed on water wherever exposed. The weather, yesterday, was extremely cold, and overcoats were in general use.

MENDOCINO—*Dispatch*, Jan. 27: Fifteen thousand logs have been floated down to the Big River Mills, in this county, since the freshet commenced, and about the same number have arrived at each of the other mills. The Big River Mill, which had been shut down for some time, has recommenced operations with a full set of hands. Lively times are anticipated on the coast.

MONTEREY—*Argus*, Feb. 3: The green landscape has for miles around been blackened by the plowshare, and the opportune rains which have fallen lately confirm the belief in farmers that the present will be a season of unprecedented fruitfulness. Consequently everybody is in the best of spirits.

PUTTING IN CROPS.—The rain has set in again, though during the fair weather which intervened, a large area of land in this vicinity has been plowed and seeded.

NAPA—*Reporter*, Jan. 20: The farmers throughout the valley are busily engaged plowing and sowing. A great portion of the land along the foothills is in excellent condition for plowing. The grain sown before the late rain looks green and flourishing. Farmers, except those who failed to sell last year's crops before the late rains, are in fine spirits. Vine-growers are busy pruning. Large numbers of vines will be planted during the winter. It is too early to make any estimate about our fruit crop. The trees are being pruned, and fruit growers say the prospects for a large crop are good. About St. Helena, the buds are swelling, and a few weeks of fair weather will make them burst. This is especially true of the almonds. A few parties last winter commenced the experiment of raising the mulberry. Their most sanguine expectations have been realized. There will probably be large numbers planted the coming season. The soil and climate of the upper portion of the valley seem eminently adapted to the mulberry.

NEVADA—*Transcript*, Jan. 30: **COUNTY FAIR**.—More than two years ago we advocated an exhibition of county products in a fair. There is no reason why Nevada county should not have an industrial exhibition equal to any in the State. Nevada and Grass Valley have now large buildings—the skating rinks—and we might have a fair every year, alternating between the two towns. Nevada county has the finest fruits, wines and cocoons and the largest pumpkins in the State. We are in favor of a fair, and would suggest the immediate organization of a society, the election of officers and directors. If this is done, and the opportunity is given, Nevada county can hold a fair next season that will equal any in the State. If it is desirable to have horse racing in connection with the fair, the Glenbrook Park can be secured for this part of the display.

SILK RANCH.—As a proof that there is no lack of interest in the silk business in this vicinity, we are pleased to mention the fact that C. L. Dimon, proprietor of the Silk Grove Ranch, is making preparations to plant 10,000 mulberry trees this winter and spring. Mr. Dimon has 10,000 mulberry trees already planted and growing. This we consider a very good beginning.

SACRAMENTO—*Reporter*, Feb. 2: Some days have now elapsed since the last north wind came down upon us with the fury of a Radical thief upon the public treasury, and as yet we hear no weeping or wailing or gnashing of teeth. It is worthy of record that we have had one "Norther" and no growing afterwards. It is actually asserted that in some parts of central California the late wind did much good. In a sanitary point of view it must have been a general blessing. But for it, chilling fogs would probably still obscure the sun. In scattering the mists of the earth it has hastened plowing and promoted health at the same time.

SAN DIEGO—*Union*, Jan. 13: The mean of the thermometer during the month of December was 56.54 deg. Yesterday the thermometer stood during the day at 59 deg. Our gardens are full of flowers; camellias bloom in the open air; the hills and slopes are covered with green grass, and butterflies are flitting through the air. From the gardens round the bay delicious, ripe strawberries are brought to the city; tomatoes are found in our vegetable shops, in plenty; crisp, juicy radishes may be had at the breakfast table every morning. This is winter in San Diego.

REMARKABLE WEATHER.—The weather in this city yesterday, in sultriness, resembled that of a summer day. At noon the thermometer in the Horton House marked 73°. Scarcely any wind stirred, although in the Tia Juana Valley, only 14 miles from town, it blew a gale. Gentlemen who happened to be in the valley at midday, tell us that a heavy overcoat and blanket were necessary to keep them from feeling cold. This was certainly a remarkable streak of weather, and we question if winter and summer were ever in such close proximity before.

SAN JOAQUIN—*Argus*, Jan. 27: The mild dry weather for the past two weeks

has been exceedingly favorable for farm work and the people have availed themselves of the opportunity to plow and plant their fields. Large tracts of new ground have been plowed and planted in grain, and all the old—the cultivated lands of former seasons—have been volunteered or sowed down with grain, increasing the average of tilled land in this county to double or treble that of any former season. During the past two seasons of drouth the foothill lands have proved far better for farming than the low valleys, and notwithstanding the assertions of stock men and newspapers devoted to their interests, farmers in the foothill regions are clamorous for a no-fence law to protect them from stock, and enable them to cultivate their little fields and harvest their products in peace. Up to this time the young grain looks as well as we have ever before seen it under the most favorable circumstances, and with a continuance of favorable weather until the middle of March, we may look for an extraordinary yield of the cereals.

FROSTY.—The weather this week has been decidedly frosty, the ground being frozen and covered with a heavy coating of white frost for two or three mornings in succession, that of yesterday morning being the most severe of the season, and was succeeded by a cloudy day instead of bright sunshine. Thus far we have had very mild weather, there being scarcely sufficient frost to check the growth of vegetation or kill the leaves upon any but the most tender trees and shrubs. The young grass upon the plains is up several inches high, looking thrifty and making a vigorous growth. Stock in most parts of the country—sheep, cattle and horses—have had good grazing, and improved their condition since the rain set in.

WEATHER.—The weather for the past two or three days has been delightful and everything indicates an early spring.

SANTA BARBARA—*Press*, Jan. 27: On Wednesday night last there was a heavy "black frost," and on tubs and buckets of water which stood out of doors, exposed to the cold, ice formed to the thickness of paper in some parts of the town, and nearly as thick as window glass in a few places. Such an event does not happen in many years in this place, and was the theme of general remark, and was cold enough to remind us of autumn weather "in the States." It is true that the thermometer did not run low, but a chilly wind came over the mountains and caused the change. But the clear rays of Thursday's sun soon made the temperature agreeable, and it was all the more agreeable that it was a little bracing. The thermometer at 7 A. M., Thursday, stood at 39°, only seven degrees above the freezing point.

SANTA CRUZ—*Pajaronian*, Feb. 1: In this county, between here and Santa Cruz, from the ocean to points high up on the mountains, the rich soil has been prepared for crops, and the work still goes on. Seemingly every section where teams can go, the land is being cultivated. All this is cheering in the extreme, telling of splendid crops, covering a far greater area, telling of prosperity to the farmer and all others, and telling also, of less poverty and greater peace and contentment, and general prosperity for our beautiful State.

Sentinel, Feb. 3: We were blessed with splendid showers Thursday night and most of Wednesday; just enough water fell to moisten the dryness occasioned by the severe north wind which prevailed a few days prior. Since the rain the weather has been warm and promising. Should the rain hold off, or not be severe for the next month, there will be double the amount of grain sown in this county than ever before. Farmers living in the vicinity of Santa Cruz would do well to sow such grain as produce good straw for paper, as the Paper Mill will require about 400 tons next fall.

SAN LUIS OBISPO—*Tribune*, Jan. 27: Two Eng. walnut trees at San Buenaventura produced last year 300 pounds of walnuts worth \$50.

Standard, Jan. 27: There are 18,000 acres of grain sown in this county last year; but that area should be, at least, doubled the present season. The prospect is truly encouraging. The ground never was in better order for plowing, and abundant crops are sure to reward the industrious farmer.

SOLANO—*Republican*, Jan. 25: **STOCK AND THE SIGNAL BUREAU**.—Judge S. C. Hastings of San Francisco is the owner of a large tract of tule-land at Maine Prairie, in this county, on which he had a large number of stock pasturing. Having become a convert to the efficiency and reliability of the predictions of the Storm Signal Bureau, a few hours before the late violent and disastrous storm he telegraphed from San Francisco to his son in charge at

Maine Prairie to at once remove all the stock from the tules to the high land, as a severe storm was impending. The order was obeyed, and the men barely succeeded in getting the last of the stock out of the marsh a short time before the surplus waters of the Sacramento broke over and inundated the land to a depth of five or six feet.

Republican, Feb. 1: The unprecedented violent norther of Wednesday last did considerable damage in this section of the county in the way of unroofing houses and prostrating barns and outhouses. H. C. Bronson's large barn in the valley was blown down. John Morris lost his barn in a similar manner. Yost, of Fairfield, lost all of the outside sheds to his livery stable. Dan McCreary had a stable badly damaged and quite a number of buildings in the valley were more or less demoralized. The wooden warehouse at Denverton was unroofed and otherwise injured. At Vacaville the wind was equally severe. Wesley Hill, living two miles from town, had his dwelling unroofed. J. W. Hubbard lost about forty of the glass sashes over his hot-beds, and J. P. French had a similar quantity destroyed. George F. Harker and Joe Bassford had their barns and a number of outhouses blown down. It is said that at one time the roof of the Court-house in Fairfield was in great danger, but by the prompt action of the Sheriff it was safely secured.

SONOMA—*Reporter*, Jan. 27: The farmers throughout the valley are busily engaged plowing and sowing. A great portion of the land along the foot-hills is in excellent condition for plowing. The grain sown before the late rain looks green and flourishing. Farmers, except those who failed to sell last year's crops before the late rains, are in fine spirits. Vine-growers are busy pruning. Large numbers of vines will be planted during the winter. It is too early to make any estimate about our fruit crop. The trees are being pruned, and the fruit growers say the prospects for a large crop are good.

SUTTER—*Appeal*, Feb. 2: John T. Ogden is now running seven gang-plows and four 4-horse harrows on his ranch in Sutter county. He will put in three quarter-sections, or about 480 acres this season. William Harkey has planted 500 acres in grain—about 220 acres of which is summer fallow. He will plant a still larger area if fair weather continues a while longer. At present his land is a little too moist to work to good advantage. Throughout the county farmers are very active, and whenever the land is dry enough the plows and harrows are in constant motion. A large area of land will be planted in the county, with the most flattering chances of a successful harvest. Should the latter part of the season prove propitious, an immense amount of grain will be harvested—more, probably, than has been secured at any previous season.

NEVADA.

Humboldt Register, Feb. 3: This week has been a very lively one amongst our stock men. Messrs. Fairbank, Cusick and Wear, from up the river, drove in a lot of neat cattle and shipped them this week; also Mathews and Graham, a large lot from Quinn River; all of which goes to supply the San Francisco market. The stock, we are informed, now fetches a good price, and this is the best time to sell. In a short time, the valleys of California will furnish enough to supply their own markets, when prices must necessarily go down. We, therefore, repeat, it is best for our stock men to sell now, and use the money in the purchase of young stock for another year's supply. During this week from 10 to 15 car loads have been sent away from this place.

PARADISE VALLEY.—Owing to the unusual amount of rain-fall, the farmers of Paradise Valley are making preparations to go into the farming business more extensively than ever before. At least, a third more grain will be sown the coming spring than at any former year.

MONTANA.

Gazette, Jan. 22: We see by the last report of the United States Land Commissioner that our Territory contains 23,000,000 acres of agricultural lands, 12,000,000 of timber lands and 69,000,000 of grazing lands.

Contrary to the apprehension that at one time prevailed, but few cattle have hitherto died in Montana. We have been much more fortunate in that respect than our neighbors in other Territories. It is estimated that at least ten thousand cattle and horses died in Wyoming in the vicinity of Laramie, while one of our Walla Walla exchanges, would seem to indicate that in that usually mild and temperate climate, the winter is one of extraordinary severity,

Agricultural Review.—Continued.

State Agricultural Society's Annual Fairs.

At the Society's Fairs have been collected together yearly in one view the many rich products of the varied soils and climates of our mountains and valleys, of our sea coasts, tule and swamp lands and river borders, affording our farmers, horticulturists, and stock breeders rare opportunities for observing the advantages of each particular location, the peculiar products to which its soil and climate are best adapted, of comparing notes, interchanging of experiences and opinions, and obtaining useful hints and valuable information for their future benefit and guidance.

At these Fairs the stock breeder, in whatever class, has presented to him invaluable lessons in breeding, feeding, and managing stock. He sees at these annual gatherings of the society the plump, long bodied, short legged, and deep hammed Berkshire; the fine haired, small headed, short faced, and more delicately formed Suffolk and Essex breeds; the thickest, easily kept, and easily fatted China pig, and many other distinct varieties of swine, and determines for himself the breed or cross best adapted for his locality and circumstances. He beholds the fine woolled, closely made, compact Spanish merino; the medium sized, square quartered, middle woolled, mutton bearing Southdown; the large, heavy built, strong boned and long woolled Cotswolds, and other pure breeds and crosses of sheep, and by inquiry and observation learns all about their points and habits, and buys of this or that distinct breed or cross, to suit his particular location and purpose. He is here made acquainted with the majestically made, broad, straight backed, deep chested, velvet coated, short horned, beef making Durham; the more delicately formed, thin necked, milk giving Ayrshires and Herefords; the wiry and hardy looking, symmetrically formed, domesticated, butter making Jerseys and Devons; and selects the breed or cross adapted to beef raising, milk selling, or butter and cheese making, according as the one or the other business is most agreeable to his inclinations or profitable for his particular location or circumstances.

Here also are displayed before him the different breeds and crosses of the horse, and he sees here illustrated and exemplified the great benefits and improvements brought about by judicious, skillful, and scientific breeding and careful crossing, and a long continued and systematic exercise and training, for the development of speed and endurance on the one hand, or on the other, for the attainment of great strength and power, and slow but heavy service and easy keeping.

He goes home and applies the lessons of the Fair to practice among his own stock, and by careful thought and close observation discovers new and valuable points or principles; and following up the new train of thought and action to which the Fair has introduced him, in a few years he becomes a prosperous stock owner and breeder, a benefit to himself, his neighbors, and the State.

The enterprising mechanic, the ingenious artisan, the skillful inventor, the tasteful artist, the profound professional man, all here find food for reflection and useful lessons for improvement, each in his own particular calling or occupation.

The Reports of the Society.

These books are distributed free of charge to all members of the society and to all other applicants throughout the State, and it is believed such distribution has accomplished much good in stimulating and directing in a profitable channel the energies of our people. They are also sent in exchange to all other similar societies in the United States and in many of the European countries, and to public libraries and private individuals who apply for them; and in this way we have abundant proof that they are accomplishing a valuable work in the interest of immigration by spreading information and attracting attention to our valuable resources.

It is suggested in view of the great amount of valuable information annually collected through the channels open to the society for an annual publication, instead of the biennial one, that such annual publication would be of but little additional expense to the State compared to the increased benefits that would result therefrom.

Although we have in a few years made great improvements and advancements in the development of our agricultural resources, and learned much that will be of

great value to us in the future, yet we have but just begun to read the great book of knowledge upon this subject which the future will open to us. We have abundant undeveloped resources, and but a very few people, comparatively, to develop them. An increase of population of the active, working, intelligent kind, is one of our greatest necessities, and there is no more effectual or economical way of securing that class of immigration, than by publishing and advertising to the world, and particularly to the class we want, the many advantages we offer them. It is from this class of people we receive the most frequent inquiries, and it is found that the most satisfactory way of answering such inquiries so as to produce a favorable impression and action, is to send in answer a late volume of the society's transactions. But when such transactions are published but once in two years much of the matter contained in any particular volume must of necessity have been collected from one to two years before publication; and if the volume is two years old at the time of sending them, such matter would be four years old at the time of using it in answer to a present inquiry. The absurdity of such a slow process of publishing to the world our rapidly developing and as rapidly increasing resources and advantages, must be apparent to every one who has the true interests of our State at heart, and who will give this subject a moment's thought.

In this connection it is mentioned that they have already received numerous orders for the forthcoming transactions, one of which is for a thousand volumes for distribution by the California Immigration Union.

Correspondence.

Under this head allusion is made to the annually increasing correspondence of the society, and to the fact that this correspondence led, during the past year, to quite a general exchange of fruit products for exhibition here and the several Eastern and Mississippi State Fairs.

This interesting exhibition of fruit from so many of the States, formerly the homes of so many of our citizens, constituted one of the most interesting and instructive features of our fair. It afforded our people an opportunity of comparing directly the fruit grown in their old homes with that grown in the homes of their adoption. And although in the recollection of younger years and of childhood, to many of our people the Eastern fruit had been painted with brighter colors and relieved with more delicate tints, and although in such recollections more agreeable flavors and pleasant acids had been attributed to it, yet when these fruits were brought in direct contact with those grown in our own State, when the eye could behold and the taste compare, these impressions of former days were quickly dispelled, and the almost universal verdict was in favor of our California grown fruit. Some of the Eastern apples were pronounced better than some of ours; but as to pears, ours were incomparably better than others exhibited.

Our fruits—principally apples, pears, and grapes—sent East and exhibited, attracted universal attention and the very general comment of the Eastern press. The verdict was generally more favorable to our fruit than their own. Our pears and grapes were considered natural wonders.

We have every reason to believe that by this exchange of fruits with these Eastern societies many advantages will result to our State, by attracting to it the attention of people who will be induced sooner or later to make it their permanent home.

Practical Figures.

By a careful estimate of the value of the agricultural products of our State for the year eighteen hundred and seventy—a year of drouth—as returned by the County Assessors to the Surveyor General, we find that value to be in round numbers \$60,000,000. The number of acres under cultivation for that year was 2,596,612, which being divided into the \$60,000,000—the whole product value—gives as a result \$23.10, the value of the product of each acre cultivated. We would here state that this estimate of value is not based on export prices, but on the prices actually obtained by producers this year.

Again: by the returns of the Census Agent there were under cultivation that year 23,375 separate farms. Allowing each farm to have a separate owner, we have 23,375 farmers, or joint proprietors, and cultivators of the soil. If we divide the sixty millions of dollars equally between this number of proprietors, each will have received as his gross profits \$256.70.

Agricultural Products of 1871.

Owing to the extreme drouth the past year, it is probable that the aggregate agricultural product of 1871 was somewhat less than in 1870, but in consequence of the higher prices obtained for most of these products it is estimated that the total value of the year's crop was not much less than in 1870. For instance: more fruit has been exported this year than ever before, and much more money has been realized for the crop. The wine crop was fully equal in quantity to that of 1870—estimated at 3,000,000 gallons—and much better in quality, and a decided improvement in prices has been obtained, giving to the producer a larger return.

Again: the wool product of 1871 was in round numbers 25,000,000 of pounds, against 19,472,660 pounds for 1870, being an increase of 5,527,340 pounds, or a little less than twenty-nine per cent. While the average price paid to producers in 1871 was about 27½ cents per pound, that paid in 1870 was only 19 cents per pound; so that while the product of 1870 brought the producers \$3,699,305, the product of 1871 brought them about \$6,875,000, or over fifty per cent. increase.

We doubt whether another State in the Union can make as good a showing of agricultural products and values under such disadvantageous circumstances.

Incumbrances to the State's Prosperity.

While it is a source of just pride and gratification thus to review the achievements of the past, we cannot close our eyes to the fact that our State in every stage of her industrial history has labored under many disadvantages. While some of these have disappeared by the lapse of time, and others have been removed by acts of the Legislature and the decisions of the Courts, others still, of a serious and threatening nature, remain to retard her progress in the way of material prosperity. With eighty million of acres of tillable land within our borders, and as we have seen of the most fertile and productive character, we are actually cultivating less than three million acres; and the total population of the State is but 560,223 persons. To make this picture still worse for the prospect of a general development of agricultural resources, upon which our prosperity mainly depends, over one fourth of this entire population, or 149,473 are residents of one city—San Francisco—and nearly one half, or 249,738, are residents of twenty-four of our larger cities and towns, leaving but 310,485 as residents of the smaller towns throughout the mining and rural districts of the State, and actual occupants of the soil.

In view of these facts it is probable that our estimate of 23,375 as the actual owners and cultivators of farms in the State, is rather above than below the truth. Why this scarcity of population in the rural districts. Why so few farmers in a State possessed of such vast quantities of unoccupied and uncultivated fertile lands and a climate not excelled in the world? Does not farming pay here? There is no place in the world where the average farmer does better, as we have shown above, than in California. Is it not an agreeable and easy country to farm in? There is no country on earth where the farmer can accomplish so much with so little labor. We have no snow, no cold, freezing winter seasons, lasting from four to six months every year, during which the farmer is kept hard at work to provide the necessary firewood to keep his household comfortable, and in housing and feeding his stock the hay and grain to secure and preserve which he has been compelled to labor hard the previous six months of the year. We have here but two seasons—the rainy season or seed time, and the dry season or harvest. As a general thing there is not over forty days in the entire year in which the farmer cannot without any inconvenience work in the field; and we are warranted by facts in saying that the judicious and economical general farmer can in California, on say fifty acres of land, and with his own individual labor and a single team, raise and market more than twice the amount of general agricultural products, and at double the net profits, as he could in the State of New York or any of the Northern Atlantic States.

If in addition to such a favorable showing of natural advantages for California we could go forth and publish to the world another very important fact, that we have within our borders from thirty to forty million acres of land equally as fertile and valuable and as favorably located as much of that which is now under cultivation, and that all this land was open to purchase in lots of from 80 to 160 acres each,

and at the Government price of \$1.25 per acre, we are satisfied it would not be three years before our State would contain half a million of the happiest and most prosperous agriculturists in the world, engaged in the cultivation of all the various agricultural and horticultural products to which our soil and climate are so well adapted. Then the idlers in our towns and cities would seek and find constant and profitable employment in the country, or would themselves become proprietors and independent cultivators of farms, and useful and valuable members of the community. Then our valuable water privileges, of which we have more than all New England combined, would be occupied and utilized, and the ring of the anvil and hum of the spindle would be heard all over the State. Then, too, would come commerce, and natural and permanent prosperity would return to the cities.

[To be continued.]

TREES NEAR RAILWAY TRACKS.—The Lake Shore and Michigan Shore and Michigan Southern railway company have commenced work of planting trees along the tracks of their road—11,000 chestnut and 10,000 European larches have been planted along its line between White Pigeon and Toledo, through the country where the forests have been mostly cleared away and the supply of timber is scantiest. The work was most thoroughly done, with the intention that every tree might live, and the cost, including the time of laborers, who belong to the regular force of the road, and did this work in connection with and in addition to their ordinary duties, at an average of eight cents per tree; excluding the cost of the company's employes, the cost was only four cents per tree.

The raising of trees suitable for cross ties on the unoccupied land adjacent to railway lines has something practical in it. These trees, when of proper size, may be used for replacing cross ties, and thus become a source of profit, or rather of saving; and when growing, a protection against storms, especially the heavy snow and wind storms of the prairie country. The rapid extension of the railway system, and the short "life" of the ties—estimated not to exceed on an average more than four and one-half years—makes the production of timber of particular interest to railway men.—*Etc.*

JAPANESE FARMING.—Hon. James Brooks recently wrote from Japan: I thought once, when on the Nile, that the Egyptians, who could turn sands into gardens, were the great farmers of the world; but the Egyptians could make no such farming gardens as these. Proud as I am of the arts, sciences, and marvellous doings of my own country, I blush when I compare American farming with this! Here are the rice fields artificially created, luxuriant in beauty now, terraced from hill-side, up and down, and watered by the hill streams, or not watered, as the husbandman wills. There are barley fields, and bean fields, and fields of all sorts of Japan agricultural productions. Forests cap all the hill-tops. Two crops are raised in Japan in one year, even on the rice fields, where the first crop is grain. The grain harvest is over in April or May. The rains come on in June or July, and now the new crops are up, and the whole country is one beautiful landscape of green.

WASTE.—It is an interesting fact that not one particle in the waste heap which is removed from a city dwelling fails to be put into circulation again, and, in one form or another, profitably employed. No sooner is the dust of the coal bin, for example, exposed to the passing view, than it is attacked by those who, sieve in hand, do mechanically what the scientist does chemically in his laboratory, separate the mass, by a rude analysis, into its elements. The most valuable of these items are the waste pieces of coal, and what is termed the "breeze," or coal dust, and half-burnt ashes. The amount of waste that goes on in city households in this item of coal can hardly be conceived by one not personally acquainted with the matter. It may be measured, however, by the fact, as stated by the best authority, that in London, after selling the larger pieces, the refuse "breeze" is sufficient to bake the bricks that are rebuilding the city.

WHOSE HEAD.—A full-bearded grandfather recently was shaved, showing a clean face for the first time in a number of years. At the dinner table his three-year-old granddaughter noticed it, gazed long with wondering eyes, and finally ejaculated: "Grandfather, whose head you got on?"

USEFUL INFORMATION.

More about Artificial Leather.

In our issue of December 9th, 1871, we gave quite a full account of the production, properties and uses of the new article of commerce, known as "artificial leather." Since that paragraph was published, we have received inquiries as to a very material part of the process of the manufacture, which was therein omitted, for the reason that we were unable to give it, to wit,—the mode of reducing the leather scraps to "pulp." Possibly the following item which we clip from the *London Trade Circular*, may answer the query:

Compressed Leather

Is at present manufactured from the refuse of saddleries and shoemaking establishments. The refuse is first cleaned from dirt and foreign substances, cut into thin strips, mixed with the refuse of raw hides, and soaked in water containing one per cent. of sulphuric acid, until the whole forms a plastic mass, which is filled into moulds and subjected to pressure. After drying the material, then, by means of steam, it has to pass through a system of rollers to render it soft, even, and similar to real leather; one per cent. of glycerine is used to prevent its cracking. It may be used, on account of its cheapness, where it is not exposed to moisture.

The article above described is evidently quite different from the "artificial leather" described in our issue of Dec. 9th, of which it will be observed caoutchouc formed a very considerable portion, while it is entirely absent from the "compressed leather" above described. But if leather scraps can be dissolved as above, the machinery of the "pulp" in the former instance is easily arrived at.

A BIG CLINKER.—Probably the biggest clinker ever known in the history of man is that now in the cellar of a former extensive stove store on River street. About 9,000 stoves were melted down by the Great Fire into one mass, which gathering into it an immense quantity of bricks and stone, presented, when cooled off, one of the most formidable masses of debris occasioned by the fire. Every endeavor to break it up by any ordinary means having failed, one of Fox & Howard's immense pile drivers was employed for that purpose, but even its huge hammer has so far, after four weeks hard work, proved ineffectual. The hammer of the first "driver" has been completely smashed up in its vain endeavor to conquer the stubborn clinker, and now a new machine of this character has been set to work. It must be several weeks yet before this obstruction to rebuilding can be removed. Chicago is ahead yet on clinkers.—*Western Rural*.

THE CASTOR-OIL PLANT.—This plant is a native of India, and has been known from the earliest antiquity, seeds of it having been found in Egyptian sarcophagi. It was used by the Greeks. In its native country it is a perennial, fifteen or twenty feet high, with a thick stem. In cold climates it becomes an annual. There are many instances of perennial plants becoming annuals by change of climate.

The rapid growth of the plant is illustrated by an instance reported in Tennessee. A castor bean was planted in May, 1871, in a garden in Memphis, and in November it had grown to the height of twenty-three feet, with a spread of foliage fifteen feet in diameter. The trunk, ten inches above the ground, was eighteen inches in circumference.

THISTLE WHISKY.—The New York Independent discourses thus eloquently in regard to thistle whisky in Canada: "Do men gather figs from thistles? No; but the Canadians are making theirs into whisky. The beverage is distilled from the stalks and leaves of the Canada thistle, and is represented to be about thirty-five per cent. alcohol, and to have a pleasant aromatic flavor. The effect upon the system is very penetrating and exhilarating, 'the sensation' being the same as if a Jew-harp in full tune was attached to every nerve. Persons who have been played on with Jew-harps after this manner will be able to tell whether they would like thistle whisky or not."

525,600 railroad trains leave London in the course of one year.

The Amethyst of Commerce.

Of this precious stone there are two species, differing widely in quality and commercial value. What is known as the oriental amethyst is a gem of the most violet color, and of extraordinary brilliancy and beauty. It is said to be as hard as the sapphire or ruby, with which it also corresponds in its form and specific gravity, differing in color merely. It has been met with in India, Persia, Siam, and some other countries, but it is exceedingly scarce, and those of this class that are offered for sale, are most always small and inferior in color.

The occidental amethyst is merely colored crystal or quartz. When perfect its color resembles that of the violet, or purple grapes but it not unfrequently happens that the tinge is confined to one part of the stone only, while the other is left almost colorless. When it possesses a richness, clearness and uniformity of hue it is considered a gem of exquisite beauty; and as it occurs of considerable size, it is suited to all ornamental purposes. In specific gravity and hardness, it bears no comparison with the oriental amethyst, and it is also inferior in beauty and lustre.

Brazil, Siberia and Ceylon produce very fine amethysts; they are found in rolled pieces in the alluvial soil, and finely crystallized in the fissures of rocks. From the first of these localities they have of late years been imported in such large quantities as to considerably diminish their value; but as they are the only colored stones, except garnets, that are worn with mourning, they still retain, when perfect, a distinguished rank among the precious gems. The present price of inferior light-colored stones in their rough state is about \$5 per pound; while those of good quality sell at \$3 per ounce. Amethysts calculated for brooches or seals may now be purchased at a much lower price than formerly.

The primary forms of the crystals is a slightly obtuse rhomboid; but it is usually found in the secondary form of a six-sided prism, terminated at one or both ends by a six-sided pyramid. The crystals vary from diaphanous to translucent, and they exhibit various degrees of splendor, both externally and internally. The fracture is commonly conchoidal, and the fragments are of indeterminate form. The amethyst is sufficiently hard to give fire with steel, and to scratch glass. Some amethysts are made quite colorless by art, when they are often mistaken for diamonds; the superior hardness of the latter will, however, enable any person to detect the imitation.

Improved Soap Bubbles.

We find in an exchange a paragraph which teaches the art of blowing soap-bubbles that will show the changing colors of the rainbow, and may be of special interest to some of our juvenile readers. The directions are as follows: Take three-quarters of a pint of water that has been boiled and become cold, and put into it a quarter of an ounce of Castile soap, cut up fine. Put this into a pint bottle, and set it in hot water in a saucepan, on the fire; there let it remain an hour or so, now and then giving it a good shaking, till the soap is dissolved. Let the fluid stand quiet for the impurities and coloring matter of the soap to settle; then pour off the fluid and add to it four ounces of glycerine and your soap-bubble solution is ready. In an ordinary way you may blow the bubbles easy with a tobacco pipe, but if you wish to attain scientific perfection, you had better employ a glass pipe. By adding a larger quantity of glycerine, you may make these bubbles so strong that you can play battledore with them.

CALIFORNIA contains 98,240,000 acres of land. About one-third—33,000,000 acres—have been surveyed. It is estimated that 89,000,000 acres are suitable to some kind of husbandry. Of these 40,000,000 acres are fit for the plow, and 49,000,000 acres for grazing, fruit-growing, and other purposes. The Commissioner of the General Land Office says the agricultural area of California exceeds that of Great Britain and Ireland, or the Peninsula of Italy.

THE Thames tunnel, thought to be such a novelty, was anticipated by one under the Euphrates at Babylon, and the ancient Egyptians had a Suez canal.

IVORY.—If ivory becomes brittle by age, it will recover its original quality by being boiled in a solution of pure glue.

GOOD HEALTH.

The Sensation of Absent Limbs.

It has long been known to surgeons that when a limb has been cut off the sufferer does not lose the consciousness of its existence. This has been found to be true in nearly every case. Only about five per cent. of the men who have suffered amputation never have any feeling of the part as being still present. Of the rest there are a few who in time come to forget the missing member, while the remainder seem to retain a sense of its existence so vivid as to be more definite and intrusive than is that of the truly living fellow member.

A person in this condition is haunted, as it were, by a constant or inconstant fractional phantom of so much of himself as has been lopped away—an unseen ghost of the lost part, and sometimes a presence made sorely inconvenient by the fact that while but faintly felt at times, it is at others acutely called to his attention by the pains or irritations which it appears to suffer from a blow on the stump or a change in the weather.

There is something almost tragical, something ghastly, in the notion of these thousands of spirit limbs haunting as many good soldiers, and every now and then tormenting them with the disappointments which arise, when the memory being off guard for a moment, the keen sense of the limb's presence betrays the man into some effort, the failure of which of a sudden reminds him of his loss.

Many persons feel the lost limb as existing the moment they awaken from the merciful stupor of the ether given to destroy the torments of the knife; others come slowly to this consciousness in days and weeks, and when the wound has healed, but, as a rule, the more sound and serviceable the stump, especially if an artificial limb be worn, the more likely is the man to feel faintly the presence of his shorn member. Sometimes a blow on the stump will re-awaken such consciousness, or, as happened in one case, a re-amputation higher up the limb will summon it anew into seeming existence.

With others it is a presence never absent, save in sleep. "If," says one man, "I should say I am more sure of the leg which ain't than of the one that is, I guess I should be about correct."—*Lippincott's Magazine*.

Painless Extraction of Teeth.

Dr. A. C. Castle—*Dental Cosmos*—observes that he has for thirty years adopted the plan of obtunding or benumbing the extremities of the temporal nerves, for painless extraction of teeth from their sockets, with complete success, never having used or countenanced the exhibition of chloroform, ether, or nitrous oxide gas for this minor surgical operation. The benumbing, or *mechanical anaesthesia*, of the temporal branches of nerves, obtunds the whole nerve to a sufficient extent to allow the teeth to be removed, with sensation so slight that, if not attending a special surgical operation, it would scarcely be noticed by the patient. One of two modes may be adopted. By application of ice to the temples, which is somewhat distressing, the sensation of cold striking deeply. The other, to which he gives the preference, is done by an assistant, with each of his middle fingers pressing with persistent firmness into the *fossa* or hollow behind the ridge or the temporal bone, which forms the external bone circle orbit of the eye. Pressure for one minute is all that is necessary. The practice is as simple as it is harmless, and leaves no after unpleasant sensation to annoy the patient. It is an instinctive method often adopted by people themselves, who press their temples with their fingers to relieve themselves temporarily of the acute paroxysms of nervous headache. This temporary pressure, with sufficient force, is all that is required to remove teeth painlessly.

A CURE FOR SEA-SICKNESS.—An authority on this subject says: "I am much surprised at the opinion, which is so prevalent, of the incurability of sea-sickness. I believe the opinion to exist among the non-medical part of the community from sheer ignorance, and among sea-going surgeons from a supineness to apply remedies—a fault to which they are rather too subject. In the greatest number of instances I allow the stomach to discharge its contents once or twice, and then, if there is no organic disease, I give five drops of chloroform in a little water, and, if necessary, repeat the dose in five or six hours."—*Ec.*

New Style of Vaccination.

The November number of *Harper's Magazine* gives the details of an improved method of vaccination, which, in view of the ravages of small-pox in our cities, may perhaps deserve the attention of our medical practitioners. The new plan was first practiced by a Mr. Ellis, an English physician. Ordinary vaccination is performed by scraping off the epidermis and thrusting the vaccine virus into a puncture made by the lancet. A greatly improved method, however, consists in raising a small blister by a drop of cantharides applied to the skin. This is to be pricked and the drop of fluid let out, and a fine vaccine point put in this place, and withdrawn after a moment of delay; the epidermis falls back and quite excludes the air, shutting out any germs that might be floating in the atmosphere. This method has been practiced by Mr. Ellis for twenty years, and out of hundreds of cases of vaccination which he has performed he has never had an instance of blood-poisoning or abscess, while by the ordinary method an occurrence of secondary abscess is by no means uncommon, and that of byæmia is often observed. The comparative safety of this method is believed to be due, first, to the exclusion of the air; and, second, to the lesser size of the aperture for the introduction of mischief, than when the punctures are made by the lancet.

Cure for Burns.

Scalds and burns which are not much more than skin deep are instantly relieved of pain, by excluding the air; that which does it the most perfectly, gives the most decided relief, and is most likely to be at hand in an emergency, is the best. Plunge the part in water, cool or warm; but as this is not applicable to some portions of the body except for a short time, too short for the healing process to take place, it must be regarded as a temporary expedient while some more permanent application can be prepared. Sprinkle common flour over the burned part until it is entirely covered over; the moisture of the wound causes the flour to form a plaster impervious to air. If this plaster cracks or scales off, the part can be moistened with warm water and flour applied as before. In a very few days a beautiful new skin will form, without a scar, and the cakes will fall off—or apply warm water until they become so soft as to fall off of themselves; do not pick them off with the finger nails. The inconvenience of the hard coating can be avoided by using another application made of oil and lime water. Pour water on a lump of unslacked lime; as soon as it is clear stir in sweet oil until it is as thick as thick cream, by slacking, and apply it freely at the time, and subsequently as often as any discomfort arises. If boiling water is poured on the lime rock, it will clear in a few minutes. Good druggists always keep lime water on hand. Families would do well to keep a bottle of the mixture always on hand; it will keep a year, and can be taken and used at a moment's notice, the natural skin growing again without a scar, and without the inconvenient hard caking of flour.

CHARCOAL.—If charcoal is taken into the stomach in a fresh condition, it tends to correct acidity, and to vitalize and invigorate, although scientists may be puzzled to explain exactly why. The most plausible theory is that it promotes slow combustion, making the partially decayed matter burn up and leave nothing but fresh. If a piece of meat is packed in fresh charcoal, and occasionally repacked, it will be all gone at last, but it will remain fresh. Charcoal will even restore meat partially decayed. Meat that has been overlooked until it is quite offensive, by washing and packing in charcoal is restored. Used in the mouth, some authors say it tends to prevent decay of the teeth. A considerably large piece, held in the mouth once in a few days or even weeks, will keep the breath sweet, and tend to preserve the teeth.

DARKNESS IN THE TREATMENT OF SMALL-POX.—If a patient, in the beginning of the attack, be put in a room from which absolutely all light is excluded save that of a candle, the effect is to arrest the disease in the papular or vesicular stage; the skin between the vesicles is never inflamed nor swollen; the large scabs of matter never form over the face; there is no intense pain, and only trifling itching, and the smell is either very slight or altogether wanting.—*London Lancet*.

MILK slightly turned sour is a common cause of diarrhea in children and infants.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

Office, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, Feb. 10, 1872.

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Reclamation of Swamp Lands.

We have received a pamphlet just published by J. Ross Browne, upon the subject of the reclamation of marsh and swamp lands, "Addressed to the Legislature of California," and giving full particulars of the objects and purposes of the so-called Anglo-American Syndicate, an organization of capitalists, including, besides its English promoters, many prominent and wealthy gentlemen of our own State. The pamphlet contains a large amount of valuable statistics and information relative to the value of swamp lands and their reclamation in this country, Europe and Asia.

It appears from Mr. Browne's statement that the Syndicate proposes to acquire large tracts of swamp land—3,000,000 acres in their figure, 300,000 of which has already been secured. This land they propose to divide into small tracts and encourage settlement upon the same by sale at low prices and on easy terms of payment; to lease, where they do not sell, on shares of the crops; or to cultivate directly. They propose to provide passages for farmers, laborers, artisans, and other industrious classes, from England, Holland, Germany and elsewhere, and to furnish them on their arrival with homes on long credits and at low rates of interest, and by making all necessary advances of provisions, seeds and agricultural implements, enable them to meet the exigencies of the first year, and ultimately acquire such property interests in the land as they may desire.

Objection has been made to this scheme as a dangerous monopoly, and a foreign one at that; but it is well met by the fact that the case absolutely requires a large concentration of capital, without which the lands must forever remain worthless. So large is the requirement for capital to carry out the improvements necessary to bring the lands under cultivation, that even foreign aid is required, which latter objection will be well compensated in the impetus which will be given to emigration of the very class of which the State stands most in need.

The promoters of this scheme ask no subsidies or public aid; their only object in coming before the Legislature is to obtain such legislation as will remove "certain restrictions now existing as to the holding, transfer and inheritance

of property in this State by non-resident foreigners; to secure the protection of property from mob violence and from trespass, and such other legislation as may be necessary to inspire foreign capitalists with confidence in the equity of our laws and the administration of justice in this State."

Encouragement of Agriculture.

There seems to be a general feeling among the agriculturists of all portions of the State, that the time has arrived when the great industry, which is the foundation of prosperity to all others, should receive a proper recognition and encouragement at the hands of the representatives of the whole people. Not only the representatives of the agricultural districts are directly interested in advocating and supporting this idea, but those who represent the people of the towns and cities, though indirectly, are almost equally interested in giving it their sanction and their whole influence. Whatever encourages and prospers agriculture and the country, gives business and permanent prosperity to the towns and cities.

It Stimulates Other Industries.

If the farmers of the State are by any means induced to exert themselves and give the rural industries an impetus, every industry of the country towns, every blacksmith shop, wagon shop, carpenter shop, tin shop, grocery, dry good and hardware merchant, is equally benefited. Nor does the benefit stop here, but the industries of the cities, the manufacturing and commercial interests are equally stimulated and benefited. As abundant rains in the mountains, through countless rivulets, streams and creeks swell the rivers of the valleys and increase the volume of the water of the bays, so the thousands of agricultural, horticultural and other productive industries of the country fill the channel of trade with their product, and crowd the large cities with abundance, imparting life and activity to every business and general prosperity to all the people. This seems to be the view taken by the delegates of the several District agricultural and horticultural societies that met last week at the State Capitol at the invitation of the State Society, to devise ways and means to put new life and energy into the agricultural societies and consequently to give the agricultural interest a greater stimulus.

Legislative Aid.

After consulting together they decided to ask the Legislature to appropriate the sum of five thousand dollars to the State Society for each of the years 1872 and 1873, the sum of \$3,000 to the Bay District Agricultural Association, and the sum of \$2,000 to each of the other agricultural societies now organized in the State. There are eight of such societies, embracing within their organizations by far the larger portion of the agricultural counties of the State. They are the Los Angeles Agricultural Society, the San Joaquin Valley Agricultural Society, the Santa Clara Valley Agricultural Society, the Sonoma and Marin District Agricultural Society, the Northern District Agricultural and Horticultural Society, the Upper Sacramento Agricultural Society, the Siskiyou Agricultural Society and the Bay District Horticultural Society. The delegates in session at Sacramento represented these different organizations, and while they agreed to ask the appropriation above named, they were also unanimous in requiring that the money so appropriated should be used in offering premiums for the encouragement of the agricultural, horticultural and mechanical industries of the State.

Provisions of the Bill.

The bill drawn up and agreed upon by them also provides that each society named therein shall report to the State Board of Agriculture each year by the first day of May the names and post office address of all the officers of such society, and on or before the first of December of each year shall report to the same Board the full transactions of the Society, including the list of the articles exhibited at the fairs and the premiums paid, as well as the money received and expended. Also all new industries inaugurated and new articles produced. The State Board of Agriculture is required to report annually to the Governor upon all subjects for the encouragement of which the State Society is organized, and to include in said report the reports of the several District Societies.

Printing the Reports.

The Governor is required to cause five thousand volumes of the latter report to be printed

annually for general distribution. Thus it will be seen that a thorough organization of the material industries of the State is contemplated and we do not hesitate to say that we deem it one of the most important and meritorious moves that has ever been inaugurated in the State, and the Legislature should not hesitate a moment to give to this measure its sanction and support. The amount of money asked by the bill is larger than has ever been appropriated by the State for the encouragement of the industries, but it must be remembered that it is for the encouragement of no one particular industry at the expense of any other, but for the benefit of all—that it is proposed to use the money in no particular locality, but to distribute it all over the State. Again, that money used in this way is only money loaned for a short period and will very soon come back into the State treasury in the shape of taxes with ten fold interest.

Managing Board.

According to the plan of the bill the State Board of Agriculture is the head of the organization, and the character which that Board has acquired for itself is a sufficient guaranty that the objects sought will be fully realized. The reports of the State Society now made biennially to the Governor and printed by the State, are among the most valuable State documents published, and are really doing more to bring the right class of immigrants among us than all other publications combined. The addition to these reports of the information to be gained from the District organizations, and their annual publication instead of biennial will add much to their value and efficacy in this direction.

No Opposition to the Bill.

We can see no reason for any opposition to a measure promising so much good, and we believe there will be none. We hope the bill will speedily become a law so that the agricultural societies throughout the State may graduate their premium lists accordingly, and the farmers begin their experiments and efforts to win the premiums offered. We shall at an early day have something to say in regard to these premium lists, and the industries for which the premiums should be offered. We will say here that it should be the aim of every society not only to improve and increase the productions of the State, but to draw out from the most successful producers facts and information for the benefit of all. To do a thing well, is praiseworthy, but to teach others how to do it is of much more benefit to the State and people. The object of all industrial societies should be to teach how to succeed in all the industries.

CHURNS.—Until this year nearly all the churns used on this coast were imported from the Eastern States. As the constantly increasing business of dairying in California called into requirement a large number of these useful and necessary articles, of course the Eastern manufacturers reaped the benefit. By this means a considerable amount of money went East that might just as well have been kept at home had any enterprising manufacturer on this coast taken the thing in hand. Recently Messrs. Howes & Co., the extensive dealers in woodenware, commenced the manufacture of these articles in all their varieties: box, cylinder, thermometer, Blanchard, dasher churns, etc. These goods can be manufactured and sold here at a much lower figure than the imported ones, and our readers would do well to send for catalogues and find out the prices.

IMPROVED HORSE COLLAR.—A substantial improvement in the manufacture of horse collars, rendering them more durable, has been made in this city by a practical workman, Mr. Hayward. It is shown in our illustrated advertisements to-day, by Messrs. J. C. Johnson & Co., the well-known dealers in harness, saddle and leather goods, at 104 Front street, San Francisco.

LOS ANGELES NURSERY.—We have received a copy of Childs & Co.'s Price List and Catalogue for 1872. These gentlemen present a very full catalogue of choice trees, including orange, birch, lime, citron, Italian chestnut, and other nut trees, etc.

HYGIENIC AND PHRENOLOGICAL JOURNAL.—We have received a number of this new monthly which is edited and published by Dr. Barlow J. Smith. It treats of very important subjects, and presents a neat typographical appearance.

GRAIN DESTROYED.—The Nevada Transcript learns that the recent cold weather has frozen the grain planted in that vicinity, and that in some places the crops are ruined.

A NEW FLOUR MILL is in process of erection in Yuba City. So says the Sutter Banner.

How Shall We Increase Our Forests.

Although we have many times discussed this subject, we deem it of such vital importance at this time that we feel justified in recurring to it again. That we need millions of additional acres devoted to forest and tree culture in this State, is agreed on all hands. We need these trees growing now to supply the future demand for wood, lumber and timber. We need their ameliorating influence upon the climate. We want them in the rainy season to protect the country from the sweeping winds and storms, to shelter our houses, barns, orchards, stock and growing crops. We want them in the mountains to retain the snow unmelted until spring and early summer, that it may then come down, swelling the rivers of the valleys and irrigating and invigorating all our productions. We want them in the summer to attract the moisture of the atmosphere, to shade our flocks and herds from the heat of the sun, and to break and neutralize the effects of the destructive Northerly winds upon our crops, our cattle, and ourselves. Indeed, all Nature, everything about us is continually reminding us of the necessity of a greater proportion of forest to cultivated fields and prairie land in the State, and the question is being asked on every hand, how shall we bring about the necessary change?

All Look to the Legislature

For some plan. Senator Betge, of this city, has broached the subject and has introduced a bill creating a State Forester and developing his plan for meeting the general demand. We understand he is not particularly wedded to this course, but only wants to inaugurate some system that shall secure the present natural forests against unnecessary destruction, and at the same time induce a general introduction of artificial forest culture throughout the country. This is what we all want, and we want particularly to inaugurate a plan that shall not work a damage to the great cause rather than a benefit. We suggested two weeks ago that in our opinion a Forest Commission would be better than a State Forester, believing that the experience of a number of practical men on such a commission would secure to it a greater degree of public confidence and be likely to bring about a greater amount of practical good than the appointment of any single individual to take charge of so important a measure. We doubted then, and we do now, the policy of the plan of importing seeds or trees directly at the expense of the State. We doubt the propriety of appointing any individual or number of individuals to establish a public garden or nursery at the expense of the State for the purpose of propagating trees for free distribution. Such a nursery could or would not be conducted with the same degree of prudence and economy, and we doubt if it would enlist the same degree of energy and enterprise that characterizes our private nurseries. The manner of exchanging and obtaining seeds and exotic trees would be too much encumbered with red tape, and many of them would meet with so much unnecessary delay that they would die in transit, or before they reached the general farmer of our State, upon whom we must depend for the final and general success of any place of forest culture.

Tree and Forest Culture.

We confess that of all the plans that have yet been proposed, and we have examined them all carefully and without a bias, we regard the proposition to pay small premiums of so much per tree to the successful producer, with the greatest favor. By this plan not one dollar of the public money is to be called for until success has been achieved, and the full benefit of the enterprise secured to the State and people. By this plan all the money drawn from the public treasury will go to the actual producer and cultivator of the trees or forest, and will thus be distributed equally throughout the State. By this plan a reliable market will be created for all valuable kinds of forest trees, and our private nursery men will thus be stimulated to exert all their skill and ingenuity and economy to supply that demand with the best grown trees of the best varieties and at the least possible cost.

If the Legislature should conclude to adopt the plan of paying the premiums for trees produced and in a good growing condition, and leave the question of the varieties of the trees that may be planted to the State Board of Agriculture, and make that Board or some other competent and trustworthy Board, judges to award the premiums, we believe that more real

benefit will be secured with less money than in any other way, and if they require, as they should, that every tree shall be of a proper age, say three years, before the first premium shall be paid, and six or more years old before the last premium shall be paid, the increased value of the real estate of the country where they may be planted will be so much enhanced in consequence of such planting, that the increased taxes therefrom will be nearly if not quite sufficient to pay the premiums called for.

We hope, therefore, that some action will be taken by the Legislature to secure so desirable an object, and that such action will be had in time to induce some planting of trees and forests under the law, the present most favorable season. The present is the most favorable season we have had for ten years for planting trees, and probably the most favorable one we will have for ten years to come. Let no one wait for a better or more convenient time.

The New Firm of Treadwell & Co.

We last week took occasion to allude to the subject of probable scarcity of harvesting machinery in the country. We have since learned that Brandenstein & Co.'s stock (which was the whole stock left over last year by the old house of Treadwell & Co.,) has been purchased by a new firm, who retain the name of the old house, Treadwell & Co., composed of S. L. Treadwell, the founder of the old house, H. W. Boardman, a New York merchant, and Berry & Place (who have been in the machinery business in this city for the past few years,) who will continue the business at the old stand, so well known, on Market at head of Front street.

The old house of Treadwell & Co. was established in 1849, and the name is a familiar one to farmers throughout the country. A business of upwards of \$16,000,000 had been done by the firm up to its suspension last year. Mr. Treadwell always bore the reputation of being a close economist, a man of untiring energy, great perseverance, and of remarkable capacity for business; his suspension, then, naturally took most people, who were acquainted with him, by surprise. It is not a matter of surprise, however, when we come to consider the facts, Mr. Treadwell's success from the time he established himself in business in San Francisco, was indeed complete, and all that a reasonable merchant could hope for; his business had increased very rapidly, and from the fact that he worked hard, and gave to it the best efforts of his life, his success was the more gratifying. He built up an immense trade, and gathered friends and patrons from the most obscure corners of the Pacific Coast, while his salesmen and clerks had grown up with him (for once becoming attached to a man he always retained him) and become fixtures of the concern. He amassed a fortune, and the house of Treadwell & Co. was known all over the country—known not only for the vast amount of business done, but for its profit and honor as well as for the industry and wealth of the house—S. L. Treadwell.

On the opening of the overland railroad, those immense stocks formerly carried by the commercial houses of San Francisco, became at once unnecessary and burdensome—even in prosperous years. But the opening of the railroad was followed by the drouths of '70 and '71 which bore heavily on all concerns engaged in the trade of agricultural implements. These years found the house of Treadwell & Co. carrying the heaviest stock ever attempted in California, both here and at its branches in Sacramento, Marysville and Stockton. Mr. Treadwell has also become interested to the extent of several hundred thousand dollars, in real estate and outside investments, which was simply so much capital locked up, when he most surely needed it. The result was natural, and under the circumstances could not have been averted.

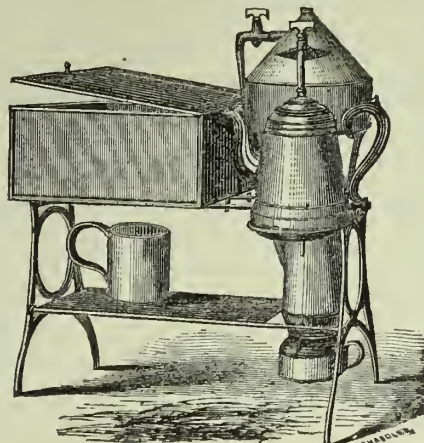
The change above announced, we are pleased to notice. The firm and the old name are so familiar in agricultural sections of California, that we have considered the occasion opportune for this extended allusion to its past career. If the new firm attains that prosperity in keeping with its past career it ought to satisfy the most ambitious member of the house of Treadwell & Co.

WHEELBARROWS.—The metallic tubular wheelbarrows which are now being so extensively used, seem destined to supersede entirely the old-fashioned ones made of wood. The first cost is a little larger, but they will be found more economical in the end on account of their durability. They are made entirely of iron, are stronger and lighter than wood, and consequently do not require frequent repairs to keep them in order. Nutting & Co., of this city, manufacture four sizes suitable for different kinds of work on the farm and in the mine.

A New Cooking Apparatus.

We give herewith an illustration of a new cooking apparatus, a recent invention, known as "Paine's Culinary Apparatus." For summer use, it would be difficult to find, among all the numerous inventions of this kind, anything which is neater, more convenient, compact or cheaper than this device.

Among the advantages claimed for it, is the fact that it can be placed on the kitchen table and a meal of victuals cooked without any perceptible increase of heat in the room, or creating a smoke, or making a litter of any kind. It is also a great economizer of the housewife's time and labor, as it can be instantly made ready, and the



PAINE'S CULINARY APPARATUS.

meal cooked with much less labor, and convenience, than when a fire has to be made in an ordinary stove. The cost of fuel is merely nominal, while it is entirely free from dust ashes or dirt of any kind. The ordinary variety of food can be cooked, coffee made and water heated at the same time. It appears to be well worth the attention of housekeepers.

Wiester & Co., No. 17. New Montgomery street, are the agents for its sale.

An Improved Shoe Fastening.

Among the recent patents obtained through the SCIENTIFIC PRESS Agency is one which relates to a device for fastening shoes, by which the shoe can be speedily



and effectually secured upon or removed from the foot as desired.

The present style of shoes worn by ladies are fastened on the side with buttons. These fastenings may be used upon them with great convenience, doing away with the necessity of a button hook, and at the same time presenting a neat appearance. The under flap of the shoe is fitted with peculiar metal standards having holes in them. At the base of the standard is a flange and upon the opposite side of the flange is a screw. The screw is passed through a hole in the under flap, and also through a stiffening, if desired, where a nut is screwed upon it, securing the standard firmly to the flap. Eyelets are inserted in the overlapping flap which are of the proper form to allow the standards to pass through them.

To fasten the shoe, a string with a knotted end is passed through the holes in each of the standards successively from bottom to top. The knot prevents the string from passing through. By using a string of moderate length there is no necessity of unlacing, merely loosen the string, draw it downward, and the shoe can be removed. The device is neat and simple, as may be seen from our cut. Aaron Lawson, of Petaluma, Sonoma Co., is the patentee.

Wiester & Co., No. 17 New Montgomery street, are the agents.

The California Vine Growers' Association.

Sometime since the committee on the culture and improvement of the vine, in the Assembly, sent out an invitation to the vine growers of the State to meet them for the purpose of consultation upon the situation of the vine, wine and brandy interests.

In answer to this invitation a large number of those interested met at the Assembly Chamber on the first of February, and the result of this meeting, so far, is the organization of a permanent society named in the constitution adopted, "The California Vine Growers and Wine and Brandy Manufacturer's Association." The objects of the association as stated are the encouragement and improvement of the wine industry and its products. To become a member of the association any person interested in the industry is required to pay into the treasury the sum of \$2.50, and to continue that membership to pay annually the sum of one dollar. The association is to hold annual exhibitions of the products of the vine, in connection with the Annual Fairs of the State Agricultural Society.

Its permanent officers are a president, two vice-presidents, and a secretary and treasurer, who, together with four trustees are to constitute a board of directors, who are charged with the general management of the association. The annual meeting for the election of officers, reports of standing committees, and of the board of directors, is to take place on the fourth day of the Fair each year.

The following were the officers elected first under the constitution:—B. D. Wilson, of Los Angeles, President; B. N. Bugbey, of Sacramento, and A. Schell, of Stanislaus county, Vice-Presidents; I. N. Hoag, of Yolo county, Secretary, and John H. Carrol, of Sacramento, Treasurer. The four trustees are J. R. Nickerson, of Placer; Joel Clayton, of Contra Costa; Wm. McPherson Hill, of Sonoma, and Robert Chalmers, of El Dorado.

The following committees were appointed:—*On Cultivation of the Grape and Pruning the Vine.*—I. N. Hoag of Yolo, Robert Chalmers of El Dorado, Geo. West of Stockton, B. D. Wilson of Los Angeles, J. R. Snyder of Sonoma, B. N. Bugbey of Folsom, J. R. Nickerson of Lincoln, G. N. Swezy, of Marysville, L. J. Rose of Los Angeles and Dr. J. Sheutzel of Contra Costa.

On Wine Making and Clarification of Wine.—A. Harazthy of San Francisco, — Craig, Sonoma, Geo. Gozinger of San Francisco, Matthew Keller of Los Angeles, B. N. Bugbey of Folsom, B. D. Wilson of Los Angeles, Robert Chalmers of Coloma, J. R. Nickerson of Lincoln, Geo. West of Stockton, J. Strenzel of Martinez, Jacob Nought of Sacramento and A. Eberhardt of San Francisco.

On Manufacture of Brandy from the Grape.—General Nagle of San José, Geo. Johnston of Sacramento, L. J. Rose of Los Angeles and Robert Chalmers of Coloma.

On Casks, Vessels, Press and Machinery.—Geo. Johnston of Sacramento, J. R. Nickerson of Lincoln, Charles Strobel of Sacramento city, Robert Chalmers of Coloma and Samuel Dodd of Lincoln.

On Statistics.—Geo. Johnston of Sacramento, Geo. W. Applegate of Placer, I. N. Hoag of Yolo, L. R. Chamberlain of Placer, S. L. Wilson of Sacramento and Joel Clayton of Clayton.

On Memorial to Congress.—B. D. Wilson of Los Angeles, H. Larkin of El Dorado, L. M. Schrack of Mokelumne Hill, Geo. Johnston of Sacramento, A. Hewel of Knight's Ferry, Robert Chalmers of Coloma, I. N. Hoag of Yolo, A. Schell, of Knight's Ferry, Samuel Dodd of Lincoln, Mr. Caldwell of Sonoma and S. L. Wilson of Sacramento.

On the Best Variety of Grapes for General Use.—J. R. Nickerson of Lincoln, Geo. West of Stockton, J. J. Ott of Nevada, Joel Clayton of Clayton, Samuel Dodd of Lincoln, D. Chamberlain of Yuba, Dr. Lockwood of St. Helena, C. G. Carpenter of Diamond Springs, I. N. Hoag of Yolo and John H. Carrol of Sacramento.

These committees are to report to an adjourned meeting to be held at Sacramento on the 21st instant, when it is intended to have a large meeting of all who are interested in vine growing or manufacturing, or selling any of its products.

The Importance and Objects of the Association.

All who have been engaged in the vinicultural industry of this State, will at once recognize the importance of such concert of action, as is contemplated in the above organization, while a few of our wine makers have established a reputation for their wines, both at home and abroad, and find it difficult to fill their orders at good paying prices, a very large number of those who have been to great expense in planting vineyards, buying machinery and casks and making wine and keeping it from year to year, are yet to see the first real net profits from their enterprise and industry, and many of them are almost disheartened and discouraged. There are thousands of men from all portions of the State having extensive vineyards of choice wine making varieties, and who make very good wine, but because they have not the means to place that wine upon the market, and win first a reputation where the demand is extensive, their sales are limited and the prices obtained are unremunerative. Then, again, there are thousands who have equally good

vineyards who know really nothing of the art of wine making, and who are consequently losing nearly all their annual expenditures in this industry. There are also thousands who have small vineyards or vineyards just coming into bearing and whose grape crop will not warrant the necessary outlay for the establishment of a wine press and cellar, and who are so far from any wine making establishment that they can realize but very little for their grapes in any way.

Again there are thousands who have got so far along in the business that if they were permitted to distill their grape pumice and refuse grapes into brandy, without paying an enormous tax to the Government, could get along and finally make a success, but upon whom this tax is so great a drawback as to entirely ruin their prospects and paralyze their efforts.

One of the first objects of this Association is to induce Congress to amend the revenue laws so as to place brandy, made from the grape, on the free list and thus relieve the entire industry of a tax which in the present situation, operates as a most effectual prohibition to distilling by small growers or as an absorber of all the profits.

Another object is to teach all how to plant, prune and cultivate the vine, how to make good wine and how to command a good paying price for it.

Still another is to bring about the association of small growers, and a formation of joint stock companies in all necessary localities, so as to reduce the business to a system, and the wine made to a greater uniformity in quality. In fact, to bring order out of chaos and success out of failure.

From the character of the gentleman to whom the management of this Association, in its infancy, has been committed, we predict for it all reasonable success in the accomplishment of its objects, and we bespeak for it the hearty support of all who are in any way interested in this valuable industry. We hope to see a large meeting of the vine growers from all parts of the State, on the 21st inst., at Sacramento, where they will undoubtedly be able to obtain much valuable information, and where they can contribute their influence towards obtaining from Congress the relief so much needed.

Agricultural Harvesting Machinery.

In reference to our article last week on the above subject, we have received the following communication:

EDITORS RURAL PRESS.—Dear Sir: We noticed in your last week's paper an article on the agricultural prospects of the coming season, and in it you take occasion to refer to the scarcity of harvesting machinery on the coast. Your remarks are well timed and to the point. It is true that Brandenstein & Co. bought of the assignee of Treadwell & Co., the stock you refer to at a very low figure—perhaps, as you say, at half its original cost, although amounting in the aggregate to several hundred thousand dollars; and had not the season been about over, they would undoubtedly have disposed of much of it. But it is also true that they offered it for sale at correspondingly low figures, as they could afford to do, and the farmers got the benefit of the transaction so far as they could, Mr. Treadwell being the heaviest loser by the operation, as he lost all he possessed, excepting his honor.

We do not write this however to dispute your conclusions, but rather to verify them. You remark that:

"For the past two years we find that very few agricultural tools, particularly harvesting machinery, have been imported into California, the large dealers in those articles in San Francisco having two years ago a large stock left over on their hands, by reason of the drouth, and consequent limited demand. This fact, in conjunction with a depression in prices the past year, discouraged new orders. The commercial embarrassment of the old house of Treadwell & Co., which had an immense stock on hand, and which was put upon the market in the midst of the season at about 80 per cent. of net cost, caused another severe loss to other holders of those goods in San Francisco, as rather than carry a heavy and unprofitable stock another year, they sold at almost any sacrifice."

The above is all very true. It is also true that red "tape" held much of this stock back till the season was nearly over. We are pleased to announce, however, that it is now in the market, the whole stock of the house of Treadwell & Co., including harvesting and all other kinds of agricultural machinery, having been purchased by the new firm of Treadwell & Co., from Messrs. Brandenstein & Co., who were the purchasers from the assignee. Whether they, B. & Co., bought at the low price stated, and on speculation, we would not say; but we can assure you and your readers that they bought at a very great discount, and that we get the full benefit thereof.

Whether there is enough machinery in the country to harvest the next crop, we cannot say; but we are now selling considerable, from the stock we have, and shall continue to for the next month at about first cost. We shall doubtless dispose of the whole of our large stock of Hoadley's Engines, Russell's Threshers, Haines' Headers, Wood's Mowers, and Kirby's Mowers and Reapers, at an early day in the season. You are right, then, in admonishing farmers who expect to purchase such machines, that they would do well to secure them in time. Very respectfully,

TREADWELL & Co.
San Francisco, February 3d, 1872.



Tight Dresses.

BY CARRIE F. YOUNG.

"Oh, I should die; why, I am so weak I can't hold myself up when I loosen or take off my corsets," said a young married woman to us. So you think you could improve upon God's plan of constructing the trunk of the body? He curiously adjusted and balanced the machinery of life inside a framework of bones—some of them firm, others flexible—all clothed with flesh containing veins, arteries, and nerves. Even the covering we call the skin is more delicate and beautiful in its structure than satin or silk. But God's wisdom is nothing to you! Oh, no! you know best, of course! and therefore attempt to improve upon His plan by putting ribs of bone and steel on the outside of this delicate network of pulsing veins, throbbing arteries, and flashing nerves.

Do you not remember how the Chinese woman swathes, and wraps, and binds up the feet of her daughter until she is comparatively crippled, and, in our eyes, painfully deformed?

Systematic compression of the foot or arm will not destroy life, but cripples the arm or foot. The vital functions of life are carried on in the trunk of the body. The lungs, liver, heart, and stomach are vital organs. When their vigor is impaired we are sick or ailing; when the functions of one or more of these organs cease, we die. Compression of these is destructive of life, just in the ratio that it impairs the vigor of these vital organs.

You do not breathe naturally in a corset or tight waist. In natural respiration the diaphragm contracts at every inspiration, and forces the liver, stomach, and bowels downward and outward—this outward motion, and the vigor and tone it gives to outside muscles, you have, in large degree, for years prevented; hence, when released from steel ribs, your stomach feels weak. At each expiration, or outward breath, the diaphragm relaxes, and the abdominal muscles contract, forcing these organs back to their former position; thus keeping these vital organs in constant and perceptible motion. This, dear, little, thoughtless woman, is the reason you are weak. This is the way and why you have torpid liver and sallow skin. This is the reason you are debilitated, and don't know what to do with yourself.

Motion and room to breathe in are necessary to good digestion. You have gradually compressed the size of your waist, and pressed these vital organs back, until they are weak and flaccid—torpid. You are only a burlesque on a healthy woman, who runs over with energy, and cheerfulness, and health.

Repent—prove yourself by your works—burn up your corsets. Of firm drilling make short, loose-fitting waists, high in the neck, short on the shoulder, with long sleeves. Place a large button every three inches around the bottom of the waist, and hang every skirt and pair of drawers to this waist. Do not allow anything to be tight enough to make a crease, or print in the flesh. You will very soon regain vigor and bloom.—*Journal of Health.*

A BALL DRESS.—A New York lady who ordered a dress for the Duke's ball, says: My dress has come home—I am stunned. Here are the figures of cost:—

Thirty yards of silk \$10 per yard.....	\$300.00
One piece French crape.....	25.00
Ten yards Brussels point.....	100.00
Linings.....	10.00
Making.....	50.00
Materials.....	35.00
Silk buttons.....	12.00
Passmenterie, etc.....	15.00

Total.....\$547.50

A GOOD WIFE.—The following old receipt for the choice of a wife seems to us a very good one:

As much of beauty as preserves affection,
Of modest diffidence as claims protection;
A docile mind, subservient to correction,
A temper led by reason and reflection,
And every passion kept in due subjection;
Just faults enough to keep her from perfection;
Find this, my friend, and then make your selection.

Don't Use Hair Oil.

One of those gentle and breezy Saratoga scolds remarks: "Now, there is no more excuse for putting grease upon your hair than there is for putting it on your hands. You people, I say, who grease your hair, are just as barbarous as the Camanche Indian who greases his face. A gentleman will never fall in love with a soiled woman. She must be sweet. Have you never, in so-called polite society, met a young lady whose face would be improved by a good, square washing? Now, this is plain, homely talk. European court circles do more bathing, ten to one, than the Bourgeoise. Indeed, in Russia—in Moscow, where you see the sweetest blonde women in the world—they have four bath-houses, each as large as the Fifth Avenue Hotel. Once daily every man and woman of patrician blood plunges all over, head and all, under pure, sparkling, rejuvenating water. This makes the hair light colored—gives it a fleecy, airy appearance—and gives to the homeliest, something of the angelic."

ARABIAN LAUGHING PLANT.—In Palestine's "Central and Eastern Arabia" we are told some interesting facts concerning this singular plant. The active principle appears to reside principally in its seeds. These seeds, when powdered and administered in full, judicious quantities, produce effects similar to those produced by the celebrated laughing gas of Sir Humphrey Davy. The person to whom the drug is administered laughs, sings, dances, and conducts himself in the most extravagant and ludicrous style. After an hour of this intense excitement he falls asleep, and upon awaking, is totally unconscious of anything that he said or did while under the influence of the drug. It is a common joke to put a small quantity into the coffee of some unsuspecting individual, in order to enjoy a laugh at his antics, and it is said, that, when judiciously given, it has never produced any evil consequences. An overdose would be dangerous. The plant which bears these berries grows only in Arabia. In Kaseem it hardly attains the height of six inches above the ground, while in Oman it has reached the height of three or four feet, with wide-spreading limbs. The stems are woody, and when stripped of the bark have a yellowish tinge; the leaf is of a dark green color, and pinnated, with about twenty leaflets on either side; the stalks are smooth and shining; the flowers are yellow, and grow in tufts, and the anthers numerous. The fruit is a capsule, stuffed with greenish padding in which lie embedded two or three black seeds, in size and shape much like French beans. Their taste is sweetish, but with a peculiar opiate flavor. The smell is overpowering, and almost sickly.

INSTRUCTION IN MUSIC.—Somebody has written this musical catechism:

"What is a slur?"
"Almost any remark one singer makes about another."
"What is a rest?"
"Going out of a choir for refreshments during sermon time."
"What is called singing with an understanding?"
"Marking the time on the floor with your feet."
"What is a staccato movement?"
"Leaving the choir in a huff, because one is dissatisfied with the leader."
"What is a swell?"
"A professor of music who pretends to know everything about the science, while he cannot conceal his ignorance."

An English traveler has returned from the women-hating settlement of Acte, in the Grecian Archipelago, where a bachelors' Arcadia had existed from time immemorial. It is a monastic institution, consisting of twenty-three convents, and numbers more than 7,000 souls. Soldiers are paid by the monks to guard the borders of the happy land, and no woman is allowed to enter. The very idea of woman, whether as sister, wife or mother, seems to be wholly lost. To all sour old bachelors who complain of the wiles of women seeking to entrap them into marriage, this territory belonging to Mount Athos, can safely be recommended as a haven of refuge.

LEAP YEAR.—The following is the statute in the old Saxon code referring to leap year: "Albeit, as often as leape year dothe occurre, the woman holdeth prerogative over the menno in matters of courtshippe, love and matrimonie; so that when the lady proposeth it shall not be lawful for the man to say her nae, but shall entertaine her proposall in all gude courtisie."

Immortality.

"Why is it that the rainbow and the cloud come over us with a beauty that is not of earth, and then pass away and leave us to muse on their faded loveliness? Why is it that the stars which hold their nightly festival around the midnight throne are placed above the reach of our limited faculties, forever mocking us with their unapproachable glory? And why is it that bright forms of human beauty are presented to our view and then taken from us, leaving the thousand streams of affection to flow back in Alpine torrents upon our hearts? We are born to a higher destiny than earth. There is a realm where the rainbow never fades—where the stars will be set out before us like islands that slumber on the ocean, and where the beautiful being that passes before us like a meteor will stay in our presence forever."

CHEAP PLEASURE.—Do you ever study the cheapness of some pleasures? Do you know how little it takes to make a multitude happy? There are two or three boys passing along—give them each a chestnut, and how smiling they look; they will not be cross for some time. A poor widow lives in the neighborhood who is the mother of half a dozen children—send them a half peck of sweet apples, and they will be happy. A child has lost his arrow—the world to him—and he mourns sadly; help him to find it or make another, and how quickly will the sunshine play over his sober face. A boy has as much as he can do to pile up a load of wood; assist him a few moments, or speak a kind word to him and he forgets his toil, and works away without minding it. Your apprentice has broken a mug, or slightly injured a piece of work. Say "You scoundrel!" and he feels miserable; but remark, "I am sorry," and he will try and do better. You employ a man; pay him cheerfully and speak a pleasant word to him, and he leaves your house with a contented heart, to light up his own hearth with smiles and gladness. As you pass along the street you meet a familiar face; say "good morning," as though you felt happy, and it will work admirably in the heart of your neighbor. Pleasure is cheap. Who will not bestow it liberally? We can make the wretched happy, the discontented cheerful, the afflicted resigned, at an exceedingly cheap rate. Who will refuse to do it?

THE SAVIOR AS DESCRIBED BY A ROMAN GOVERNOR.—At the period when the fame of Jesus Christ began to spread in Judea, Paulinus Lentulus, who was then its Governor, wrote to the Roman Senate: "There is here, at the present time, a man of singular virtue, who is called Jesus Christ; the barbarian esteem him as a prophet, but his sect adore him as a descendant of the immortal Gods. He restores the dead to life, and heals disease by a word and his touch. He is of a tall and graceful stature, his aspect is mild and venerable. His hair is of a color that cannot be described, falling in ringlets below his ears, and spreading over his shoulders with infinite grace. He wears it parted on the top of his head, after the manner of the Nazarenes. His forehead is broad and smooth, his cheeks are tinged with a lovely bloom. His nose and mouth are admirably regular; his beard bushy, and of the same color as his hair, descends an inch below his chin, and, separated in the middle, it assumes the form of a fork. His eyes are beautiful, sparkling and vivid. He reproves with majesty; and his exhortations are full of sweetness; whether he speaks or acts, he does all with eloquence and gravity. He has never been seen to laugh, but has often been known to weep. He is very temperate, very modest and very wise. In a word he is a man who, by his great beauty and his divine perfections, surpasses the children of men."

SLURS ON WOMEN.—At a dinner, at which no ladies were present, a man, in responding to the toast, "Woman," dwelt almost solely on the frailty of the sex, claiming that the best among them were little better than the worst, the chief difference being in their surroundings.

At the conclusion of the speech, a gentleman present rose to his feet and said:

"I trust the gentleman, in the application of his remarks, refers to his own mother and sisters, not to ours."

The effect of this most just and timely rebuke was overwhelming with confusion and shame.

MANY men die martyrs, and then have an impartial judgment passed upon their lives.

Young Folks' Column.

A Little Indian Shepherd.

There is a Digger boy employed on a sheep ranch in Monterey county, California, who is a human curiosity. He herds about eight hundred sheep all by himself, and the overseer says he knows every one of them by sight, and when he brings them in at night, he will get on the corral fence and tell whether one of them is missing. He is about fourteen, and has a face as round as the moon, and the brightest black eyes, which fairly sparkle with mischief. He turns more somersaults and hangs head downward from more trees than any man can count readily, and seems hardly to be aware of the existence of the sheep during the day, yet brings them all in at night. Like a true Indian his motions are perfectly catlike, and he never calls to his sheep, but always imitates the owl, the wild-cat or the coyote. When his employer calls him, he never answers a syllable, but starts and runs toward him with all his might.

A revolver was bought for him, that he might shoot at the coyotes when they came to prey on his flocks, but he regarded it with aversion. At last they prevailed on him to carry it two days in succession, and on the second day he saw a wild-cat, crept upon it with true Indian stealth, lay flat on his belly, held the pistol to his face, and after sighting along the barrel and then squinting at the cat alternately, about a dozen times, at last he fired. The pistol kicked him in the butt of the ear, and after that he never could be induced to take it again. The Diggers are a timorous and gentle race, and do not take to fire-arms like the Apaches.

Something About Names.

The following counties in the State of Illinois bear the names of noted men: Alexander, Franklin, Calhoun, Pope, Washington, Hancock, Boone, Cass, Clay, Monroe, Putnam, Livingston and Montgomery.

In the State of Illinois we find the following names of poets represented in the counties: Greene, Montgomery, Scott, White and Spenser. Some of the colors are also used in these names: Brown, Orange, Lake and Vermillion. Now turn to Kansas and look at the names of its counties; in Indian Nomenclature we find Pottawatomie, Wabnansel, Neosho, Nemaha, Ottawa and Shawnee; of noted men of the present day we find names as follows: Seward, Butler, Davis, Douglas, Ellsworth and Chase.

Nebraska has given some queer names to its counties, for instance: Black Bird, L'Eau qui Laert, and Sarpt.

Mississippi counties have got some very hard names—that is hard to pronounce—but they have a signification that is a pretty study if anyone will devote the time to it: Attala, Loahma, Issaguena, Itanamba, Neshoba, Noxbee, Ohtibbeha, Panola, Pontotoc, Tallahatchee, Tippah, Tishomingo, Yalabusha, and Tumica.

California Plantation.

Plant Lake Mono, and what will you have? Ans.—A dead sea. Plant the Morning Call? Ans.—Daily gossip. Plant Los Angeles? Ans.—Lost Angels. Plant Mt. Hood and what will you see? Ans.—Snow-caps. Plant the San Francisco Chronicle office and what will spring up? Ans.—Young Boys. Plant the Nevadas and what will you see? Ans.—See Errors (Sierras).

Geographical Conundrums.

What county in Mississippi represents a large flower? Sunflower.

What county in New Jersey appears to be upside down? Somerset.

What county in Ohio needs more light? Darke.

What counties of the same State ought pugilists to reside in? Knox and Licking.

WHAT THEY MEAN.—The Plantation Bitters Company used the following characters as an advertisement, some time before any one could decipher what they were intended to represent. "S. T. 1860—X." "Started Trade in 1860 With Ten Dollars."

I. O. G. F.—According to a certain wag, these letters mean "I Once Got Tight," which may be literally true, even if belonging to the Independent Order of Good Templars.

C. O. D.—Usually Collect On Delivery, is claimed by a young lady recently betrothed, to mean "Call On Dad."

DOMESTIC ECONOMY.

Various Ways of Cooking Potatoes.

BOILING POTATOES.—To boil a potato well requires more attention than is usually given. They should be well washed and left standing in cold water an hour or two, to remove the black liquor with which they are impregnated, and a brackish taste they would otherwise have. They should not be pared before boiling, they lose much of the starch by so doing and are made insipid. Put them into a kettle of clear cold water, with a little salt, cover closely and boil rapidly, using no more water than will just cover them, as they produce a considerable quantity of fluid themselves while boiling and too much water will make them heavy. As soon as just done instantly pour off the water, set them back of the range, and leave the cover off the saucepan till the steam has evaporated. They will then, if a good kind, be dry and mealy. This is an Irish receipt and a good one.

TO BOIL NEW POTATOES.—When fresh dug, take small potatoes not quite ripe, wash clean, rub the skin off with the hand—never use a knife—and put them in boiling water with a little salt, boil quickly; when done, drain dry and lay into a dish, spreading a little butter over them, or boil some new milk, put in a great spoonful of butter, and thicken with a little flour wet smooth with milk. When the potatoes are cooked and laid in the dish pour this dip over them. This is very nice.

MASHED POTATOES.—Boil with skins on; when done, peel quickly, and put, as you peel, into a saucepan over the stove, but not hot enough to burn; mash free from lumps to a smooth paste; have ready, before peeling the potatoes, a piece of butter half the size of an egg, melted, and half a cup of sweet milk with pepper and salt to taste; when the potatoes are mashed smooth, pour in the milk and butter; and work it in quick and smooth, then dish; dress the top with a knife so as to be round and smooth, rub on a little beaten egg and brown in the oven very delicately. Serve with fowls or roast meat.

POTATO CROQUETS.—Boil potatoes with just enough water to cover; when three parts done pour off the water and let them steam to finish cooking; then press them through a wire sieve; this done, put them into a stewpan, adding one ounce of butter to one quart of potatoes, and the well beaten yolks of two eggs; mix together thoroughly; then flour the pasteboard, divide the potatoe paste into square parts and roll them on the board to any shape—balls, pears, corks, or what you choose—dip them in egg and bread crumbs, and fry in hot fat to a light brown.

POTATO SALAD.—Cut ten or twelve cold boiled potatoes into slices from a quarter to half an inch thick; put into a salad bowl with four tablespoonfuls of tarragon or plain vinegar, six tablespoonfuls of best salad oil, one teaspoonful of minced parsley, and pepper and salt to taste; stir well that all be thoroughly mixed. It should be made two or three hours before needed on the table. Anchovies, olives, or any pickles may be added to this salad, as also slices of cold beef, chicken or turkey if desired.

POTATO SOUP.—Boil and mash potatoes, about three pints when mashed, to three quarts of rich beef stock, ready boiling, add pepper and salt to the taste, stir gradually into the boiling stock, then pass all through a sieve and return to the soup kettle; simmer five minutes, and serve with fried bread, or one head of celery, two spoonfuls of rice may be put to the stock, well boiled and the potatoes added, when all are done, then pass through the sieve, return to the soup kettle, simmer five minutes and serve.

CLEANLINESS.—A neat, clean, fresh-aired, sweet, cheerful, well arranged house exerts a moral influence over its inmates, and makes the members of a family peaceable and considerate of each other's feelings and happiness. The connection is obvious between the state of mind thus produced and respect for others, and for those higher duties and obligations which no laws can enforce.

On the contrary, a filthy, squalid, noxious dwelling, in which none of the decencies of life are observed, contributes to make its inhabitants selfish, sensual, and regardless of the feelings of others; and the constant indulgence of such passions renders them reckless and brutal.

The Economy of a Damper.

A damper in a stove is of great importance in a house—both as a matter of economy, and comfort also. It makes the hot air remain in the stove, and does not take in the outside heated air, which is done through the crevices and proper draft. If the damper is shut, you instantly feel the heat, on your face, showing that it is thus kept in the room. The circulation is thus kept stopped in the room, and a soft, pleasant atmosphere is the result.

The main item is, however, the economy in fuel. Not more than half the quantity of wood is used, and yet an equal amount of heat is generated. This is of some consequence to the purchaser, or to the boy or man who has it to chop; and of course, has an extra amount to furnish, when it goes roaring up the chimney. Then to the housekeeper, the fact that she gains more ashes by the use of a damper, is an inducement to use one, as they are not lost in the air.

Dry hard wood is positively necessary, where a damper is used. Maple will make a nice bed of coals. Birch comes next, though the flame is not so hot and bright as the former. The beech blazes well, but is too much like soft wood. When the blaze is gone there is not much left of it. With a damper you can use soft maple. It is often the case that when there is not a damper, the fire is continually "going down," the heat is unequal, and the temperature of the room is being continually rendered cool—first dry, then damp, making it disagreeable and dangerous. This matter is of the utmost importance to the housekeeper, and should be attended to.—*Western Rural.*

Mechanical Hints.

A TOOTHLESS SAW.—A smooth, toothless, circular saw, making 3,000 revolutions per minute, for sawing large beams, guides and shafts of iron in a cold state, is in operation by the Phoenix Iron Company of Pennsylvania.

PROPULSION. A wheel has been introduced for the propulsion of boats in shal water, which is provided with arms having spurs which revolve upon the bottom of the canal or river. The plan was thoroughly tried on the head-waters of the Alleghany river, some years ago, but proved an entire failure.

THE TURN-TABLE of the new Rock Island bridge weighs one hundred and fifty tons. It is supposed to be the most massive piece of machinery of its kind in the world. It is certain that nothing in the line in this country approaches it. The principal circles, composed of six segments, weighing six tons each, and the base circle, are in their places.

USEFUL CEMENT.—The following cement is found to be excellent for use in cases where it is desirable to join or close vessels for containing the vapor of acids, or highly corrosive substances: Beat and sift finely dry pipe clay; add painters' drying oil, and mix, in a mortar, to a moulding consistency. Use this lute in cylinders, flattened, and applied to the joinings. The points to which applied must be perfectly clean and dry.

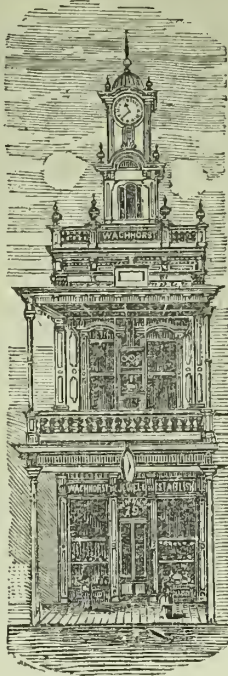
JOINING RUBBER.—Rubber is easily joined and made as strong as an original fabric, by softening before a fire and laying the edges carefully together, without dust, dirt or moisture between. The edges so joined must be freshly cut in the beginning. Tubing can be united by joining the edges around a glass cylinder, which has previously been rolled with paper. After the glass is withdrawn the paper is easily abstracted. Sift flour or ashes through the tube to prevent the sides from adhering from accidental contact.

NEW POWER.—A Philadelphia mechanic claims to have invented a hydro-pneumatic engine which by means of one pound of water will produce one thousand pounds of power. The agents employed are air and water, by a new method of application. If this power is one-third of what is claimed for it, steam, turbines, etc., have seen their last days. We await further developments with impatience.

THE SAND BLAST.—The process of cutting glass and stone by the sand blast, which we have already fully described, has been the subject of further experiment, which justified the belief that it will eventually come into general use, cheapening many processes which now require skill labor at high cost. It is believed to be available for many purposes besides that of ornamentation.

WACHHORST'S TOWN CLOCK
—AND—
JEWELRY STORE.

WATCHES AND DIAMONDS,
At 79 J street, between Third and Fourth, Sacramento.



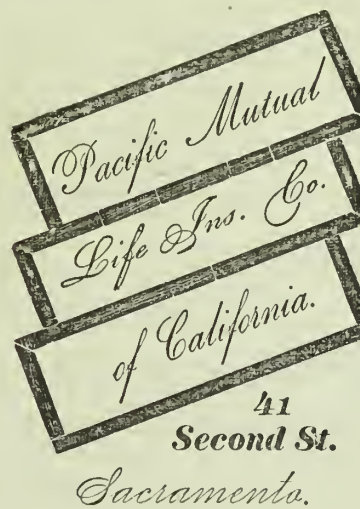
JEWELRY AND SILVERWARE,
At 79 J street, between Third and Fourth, Sacramento.

THE LARGEST AND FINEST STOCK OF GOODS
AT THE VERY LOWEST PRICES.

Every article of Jewelry bought in this establishment
WARRANTED strictly as represented.

Watches, Jewelry and Clocks Repaired
BY THE BEST WORKMEN.

All orders from the country promptly attended to.
7v2-3m



LELAND STANFORD
President.

H. F. HASTINGS, Vice President
JOS. CRACKBON, - Secretary

Schreiber & Howell

General Agents, Home Office.
v2-3m 137 Montgomery street, San Francisco.

THE GREAT
RETAIL DRUG HOUSE

OF THE PACIFIC COAST!

JAMES G. STEELE & CO.,

Chemists and Apothecaries.

Import and sell directly from Eastern and European Markets.

NO. 521 MONTGOMERY STREET,
San Francisco.

Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

—AND—

GRINDELLA LOTION,

For the Cure of Poison Oak.

21v2-3m

SAN JOSE REAL ESTATE
FOR SALE.

Farms from \$12 to \$100 per acre.
Garden Land from \$100 to \$300 per acre.
City Lots in San Jose or Santa Clara on easy terms.
Well Improved Suburban Homesteads and Desirable City Property for sale by

J. A. CLAYTON, Real Estate Agent.
Office on Santa Clara street, opposite Auzeais House.
Rents collected, Tax paid, and Money invested on first-class security.
20v2-3m



THE
CALIFORNIA COTTON GROWERS'
—AND—
Manufacturers' Association.

INCORPORATED APRIL 10, 1871, FOR TWENTY-FIVE YEARS.

Capital Stock, \$500,000, in Shares of \$20 Each.

The Company's Plantation of 10,000 Acres is situated at and surrounding the town of Bakersfield, in Kern County. The Association has recently purchased of Messrs. Livermore & Chester, Real and Personal Property to the amount of \$200,000. The Company's stock, independently of the profits of raising Cotton and Manufacturing the same, is fully secured by Real Estate.

OFFICERS:

L. H. BONESTELL, San Francisco..... President.
JAMES D. JOHNSTON, San Francisco..... Secretary.
JULIUS CHESTER, Bakersfield, Kern County..... Vice President and Resident Director.
BANK OF CALIFORNIA..... Treasurer
LEONIDAS E. PRATT, San Francisco..... Law Adviser
23v2-4f

WILCOX'S

IMPROVED STEAM WATER LIFTER,
With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in all respects the most ECONOMICAL of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,
Manufacturers of and Dealers in
Monuments, Headstones, Tombs,
MANTEL PIECES, ETC.,
421 Pine street, between Montgomery and Kearny, SAN FRANCISCO.
21v2-1y

WEBSTER'S PIONEER
Agricultural Warehouse,

No. 201 and 203 El Dorado street,
STOCKTON,
Agency and General Depot for the San Joaquin Valley for the sale of the Celebrated STUDEBAKER WAGONS and all kinds of Standard Farming Implements.
4v3-3m

NATIONAL LIVE-STOCK JOURNAL, Published at Chicago. \$2 a year. Specimens free.

NATIONAL LIVE-STOCK JOURNAL, Published at Chicago. \$2 a year. Specimens free.

BEST PAPER FOR STOCK BREEDERS, STOCK RAISERS, DAIRYMEN, POULTRY FANCIERS AND APARANS. Devoted exclusively to improvement of Live-Stock and advancement of Dairy interests, and contains no matter not relating to these interests. Unquestionably superior to all papers of its class. GEO. W. RUST & CO., Publishers, Chicago, Ill. ja20-1m

Floral Guide for 1872.

Containing seventy-two pages and Two Beautiful Colored Plates nicely illustrated, giving plain directions for the cultivation of nearly a THOUSAND VARIETIES of Flowers and Vegetables. Full bound with your name in gilt, post paid, 50 cts. Paper cover and one colored plate, 10 cts.

Address, **M. G. REYNOLDS,**
22v2-6m Rochester, N. Y.



Will change gray hair to its youthful color with a few applications. Suits all shades of color and complexion. Will neither stain hands, scalp or clothing. No sediment; clear as crystal. No sulphur or other bad smell, but delightfully perfumed. As a hair dressing it has no equal. It makes the hair rich in appearance, glossy and curly; cures dandruff and all other irritations of the skin, and prevents the hair from falling out. Liberal discount allowed dealers. Address orders to J. F. FUGAZI, or H. C. Kirk & Co., Sacramento; Hug & Schmidt, Agents, 535 Commercial street; Heathfield, Bogel & Co., 206 Battery street, San Francisco. Sold by all Druggists. dc16-3t

H & L AXLE GREASE.



The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

HUCKS & LAMBERT.

The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERT

Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.

3v24-coww

HOME-MADE CHURNS!

H. G. PRATT,

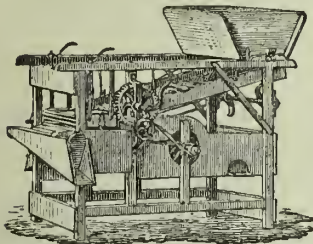
113 Commercial street, between Davis and Drumm streets,
SAN FRANCISCO,

Has been engaged for the last ten years in the Manufacture of

BOX AND THERMOMETER CHURNS
in this city.

Also manufactures all kinds of Implements generally used in Dairies. 6v3-3m

FREEMAN'S GRAIN SEPARATOR.



THE BEST PATENT SEPARATOR MADE.

I will guarantee it to Excel any other Machine extant in separating Grain from all kinds of Foreign Seeds. It will separate perfectly the different qualities of Grains, producing pure Seed. It is in every way a Practical and Successful California Machine. It has proven successful over all other Machines on trial, and has taken two First Premiums at the Petaluma Fair. Machines and State and County Rights for sale by

W. D. FREEMAN,
Tomas, Marin county, Cal.

Send for Circulars.
P. S.—The right to use my superior Patent Pod Screen will be sold at reasonable prices to owners of Threshers. 4v3-2m-cowbp

TO WOOL GROWERS.

The undersigned have received, per ships Grace Darling and Marianne Nottebohm, from Newcastle, N. S. W., and offer for sale,

Fifty Merino Rams,

Selected from the best stock of Saxony and French Merinos in Australia. These animals are young and in fine condition and are well worthy the attention of Sheep Raisers. They can be seen at Sweeney's Stock Yards, corner of Howard and Tenth streets, S. F.

fe10-2w

WILLIAMS, BLANCHARD & CO.,
218 California st, San Francisco.

FOR SALE.

ONE HUNDRED AND EIGHTY-ONE ACRES OF LAND In Antelope Valley, Colusa County
Good Grain or Grass Land. Wood, Water, and good House, with five rooms; shed for horses, Government title—all for five dollars per acre.

Enquire of **DEXTER WITTER,**
Upper Lake, Lake county, Cal.

FARMS AND STOCK RANGES,

On Government, State and Railroad Lands, IN NEVADA.

Having surveyed a large portion of the public domain in Northern Nevada, I am prepared to select, locate and obtain title for parties desiring to secure such lands, in quantities to suit, and on the most favorable terms.

Address or apply to **A. J. HATCH,**
U. S. Deputy Surveyor, Reno, Nev.

Farms for Nothing in Montana Territory.

Send \$2 (greenback) to H. W. MAGUIRE, Bozeman City, Montana, and get full particulars about the

Lands and General Business Prospects

On the line of the N. P. R. R. Special questions carefully answered, and investments made for non-residents. References, Editors RURAL PRESS. 3v3-3m

San Francisco Wire Works,

NO. 665 MISSION STREET,
Near Third Street.....San Francisco.
C. H. GRUENHAGEN & CO.

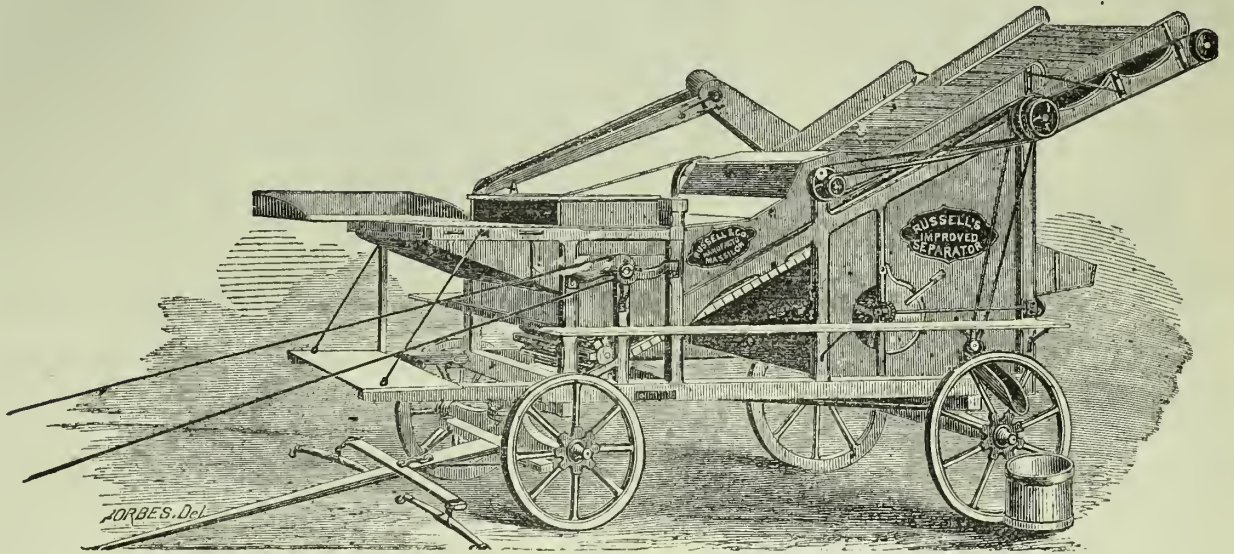
IN THE FIELD AGAIN!

TREADWELL & CO.,

WITH THE OLD STANDARD

HARVESTING MACHINES,

Hoadley's Portable Threshing Engines,



Russell's Threshers, Haines' Headers, Wood's Prize Mowers
Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

These Machines MUST BE SOLD, and the supply being limited, and prices at FIRST COST, they will be disposed of at an EARLY DAY. Farmers who intend to buy Harvesting Machines for this season, would do well to ORDER NOW, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. **DON'T FAIL TO GET OUR PRICES BEFORE ORDERING.**

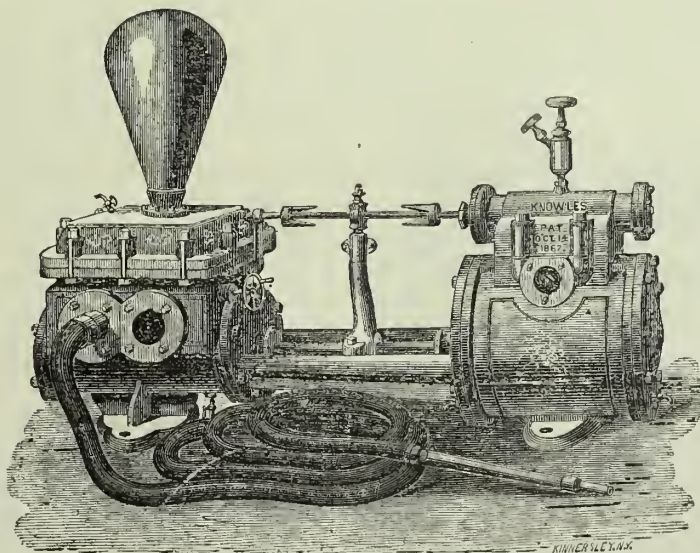
TREADWELL & CO.,

OLD FARMERS' MACHINERY DEPOT, SAN FRANCISCO.

KNOWLES' PATENT STEAM PUMP.

Awarded First Premium and Diploma

Over all Competitors, at Mechanics' Institute Fair of San Francisco, 1871; also Special Medal and Diploma at State Fair.



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11 1/2 per cent., while others lost as high as 40 per cent., showing great difference in economy.

CENTRAL PACIFIC R. R., OFFICE OF THE GEN'L MASTER MECHANIC, SACRAMENTO, Cal., April 14, 1871.

A. L. FISH, Esq., Agent of the Knowles' Steam Pump, San Francisco—Dear Sir: In reply to your inquiry as to the merits of the Knowles' Steam Pump, in use upon this road, I will say that we have nineteen of them in use on this road as fire engines, and pumping water for shop and station use. I consider the Knowles Steam Pump the best in use, and prefer it to any other. Yours truly, A. J. STEVENS, General Master Mechanic.

**WE BUILD AND HAVE CONSTANTLY ON HAND
THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.**

A. L. FISH, Agent.

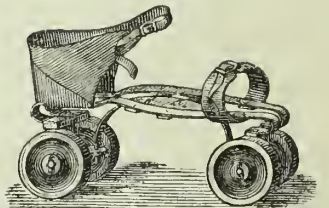
No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-cow-hp

The C-Spring Roller Skate.

PATENTED 1871.



Rights and Skates for Sale.

This superior Skate is now beginning to attract the attention of Rink Owners, it being the only Cramping Skate now before the public (except the Plympton Skate) that can run without infringing a former patent.

This Skate is Positively no Infringement Of anybody's patent. It is made in the most substantial and workmanlike manner, and possesses the following points of merit: Beauty, Elasticity, Ease of Movement, Strength, Lightness, and does not injure the skating floor as much as the ordinary skate.

Every pair Warranted to be just what it is represented. Parties intending to

START A RINK,

Should examine and test this Skate. Sample pairs sent C. O. D. on application.

In ordering samples state the number of boot or shoe worn, and whether for lady or gentleman.

For City, County or Rink Rights, call on or address **WIESTER & CO.,**
No. 17 New Montgomery street (under Grand Hotel),
SAN FRANCISCO.

Phelps' Patent Animal Trap,



FOR GOPHERS, SQUIRRELS, RATS, CATS, AND OTHER "VARMINTS."

This Trap, as may be seen, is of simple construction and not likely to get out of order, and very durable.

It is Very Efficient

and can be used conveniently by women or children. THE CHEAPEST AND BEST YET INVENTED. Price 50 cents. By mail, prepaid (to places where express charges are high), \$1. A liberal discount to clubs or dealers who buy by the dozen. Address the inventor and manufacturer, **D. N. PHELPS,**
al-ly-awbp San Leandro, Alameda County, Cal

JOHN J. NEWSOM,

Architect,

No. 430 Montgomery street, over the U. S. Treasury,
25v2-6m SAN FRANCISCO.

MATTESON & WILLIAMSON'S

AMERICAN CHIEF



GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

14v2-3m

HILL'S PATENT
EUREKA GANG PLOW,

The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use.

They are made of the best material, and every Plow warranted.

They are of light draught, easily adapted to any depth, and are very easily handled.

They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc.

16v23-4f

BAKER & HAMILTON,

Sacramento and San Francisco,

-IMPORTERS OF-



HARDWARE,

Farming Implements,

Machines, Etc., Etc.

Gang Plows,

Single Steel Plows,

Iron Plows,

Harrows,

Cultivators,

Seed Sowers,

Grain Drills,

Etc. Etc.

18v2-3m

Gang and Single Plows.

I am prepared to furnish my popular Gang and Single plows, of the lightest draft (best Plow to scour in sticky soil), and the most efficient Plow made. My leverage for raising the gang has no equal—a thirteen year old boy can work it with ease. I make any pattern of mould desired, to order. Twenty years experience in plow making enables me to demonstrate all I say, and every Plow is warranted to do all I recommend it to perform.

Send your orders early, and for further information apply to

A. ELLISON, Patentee and Manager,

26v2-2m

Marysville, Cal.

JACKSON MICHIGAN WAGONS.



The large sale of the above WAGONS has induced a number of persons to try and sell other Eastern-made Wagons, none of which have any proof that they will stand in this dry climate. JACKSON WAGONS have the highest certificates from use for ten to fourteen years, consequently the buyer runs no risk in purchasing the Jackson Wagons. All sizes for sale low by

J. D. ARTHUR & SON, San Francisco.

N. B.—Warranted for three years.

21v2-3m

J. ROSS BROWNE,

Office; No. 45 Montgomery Block,
SAN FRANCISCO, CAL.

P. DAVIS' WIRE AND PICKET FENCE.

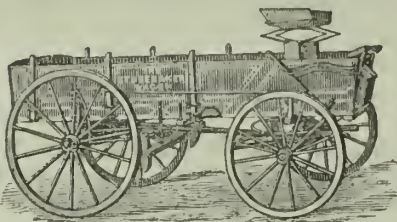


Although about two hundred different styles of fences have been invented and patented in the United States within the past ten years, yet this Fence, for GENERAL FARM USE, stands at the head of the list. This is a Virginia invention, and the actual cost of the Fence complete in that State is less than fifty cents per rod. Three men can put up six hundred yards per day. Price of territory, and circular with full description of fence, sent on application.

WHESTER & CO.,

No. 17 New Montgomery street (under Grand Hotel), San Francisco.

STUDEBAKER WAGONS.



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,

DURABILITY,

LIGHT RUNNING,

GOOD PROPORTION,

AND EXCELLENT STYLE,

They Have no Peer.

IRON AXLE,

TRIMBLE SKIN,

HEADER AND

SPRING WAGONS,

Of all sizes, with HEAVY TIRES riveted on, always on

hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,

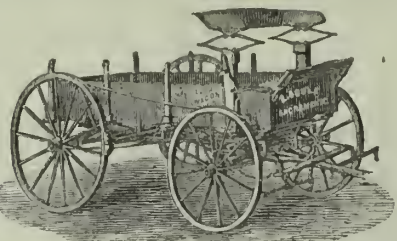
As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

2v3-3m

E. E. AMES, General Agent.

Factory and Depot, 217 and 219 K street, SACRAMENTO.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,

SACRAMENTO, CAL.

ap22-3m

DEALERS AND CONSUMERS

Are hereby notified that

THE STANDARD SOAP COMPANY

Continue to manufacture the following Standard Preparations:

Deterative, Prize Medal and Laundry Soaps;

Kane's Condensed Soaps;

Thomas' Cool Water Bleaching Soaps;

Standard and Eureka Washing Powders;

Madame Balcar's Washing Fluid and Liquid Bluing.

Adamantine Candles, and a general assortment of Family, Laundry, Fancy and Toilet Soaps.

Manufactory, 204 and 206 Sacramento street, San Francisco.

21v2-3m

R. IRELAND,

The old Pioneer Broom Factory—Established August, '56. No. 82 J street, between Third and Fourth, Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubbs and Pails.

16v2-3m

LUBRICATING OIL,

THE BEST IN THE WORLD!

The attention of the public is called to GRUBER'S NEW PATENT LUBRICATING OIL.

For running Machinery of all kinds it has no equal.

It will not gum, and runs perfectly smooth, cool and clean.

This OIL offers special inducements to Farmers, Livery Stable Keepers, etc.

It will be found far Superior

To any other Oil or Grease now in use, for Carriages, Wagons, and all kinds of Farming Machinery.

Mill-men, Printers, and all others having occasion to use a Lubricator, will find a decided advantage in using this Oil—one gallon being equal to two of the best Oil in the market.

Perfect Satisfaction Guaranteed

OR MONEY REFUNDED.

Orders per Mail or Express will receive prompt attention.

Office and Salesroom—

GRUBER LUBRICATING OIL CO.,

Corner Drumm and Market streets,.....SAN FRANCISCO
no25-3m-bp-sa

J. R. ANDREWS,

SUCCESSOR TO

F. MANSELL & CO.,

House and Sign Painters,

412 PINE STREET, SAN FRANCISCO,

Three doors above Montgomery st.

F. MANSELL still superintends the Fancy and Ornamental Sign Work.

Country Orders Attended to

With Punctuality, Cheapness and Dispatch.

26v23-3m-bp

J. BREUNER & CO.,

Importers, Jobbers and Manufacturers of



FINE FURNITURE,

BEDDING, MIRRORS, ETC., AT THE

Very Lowest Prices.

Nos. 166, 168 and 170 K street.....SACRAMENTO.
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CHICKERING & SONS'



PIANO FORTES,

-AND-

Mason & Hamlin's Cabinet Organs.

L. K. HAMMER.....Agent.

Also Importer of Sheet Music, Music Books and Musical Instruments. Finest Violin and Guitar Strings.

No. 230 J street, SACRAMENTO.

16v2-3m

AVERILL'S

CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

Office, corner Fourth and Townsend streets,
San Francisco.

HELY & JEWELL, Agents.
15v23-3m

LINFORTH, KELLOGG & CO.,

IMPORTERS OF

HARDWARE

AND

AGRICULTURAL IMPLEMENTS.

The attention of Farmers is respectfully called to the following Superior

GANG PLOWS,

Which we now offer as the BEST hitherto made:

PACIFIC RAILROAD,

MONITOR,

EUREKA.

General Agents for the Pacific Coast for the Celebrated

WORLD MOWERS AND REAPERS,

BALL'S OHIO REAPERS,

TORNADO THRESHERS.

Rumsey's Lift and Force Pumps,

WOOLWORTH HANDLE WORKS,

LEARY RAILROAD LANTERN,

Etc., Etc., Etc.

IRON PIPE, RUBBER HOSE, RUBBER AND

LEATHER BELTING, ROPE AND FENCE

WIRE, ALL AT LOWEST

MARKET RATES.

3 and 5 Front Street, San Francisco.

WILLCOX & GIBBS

IMPROVED NOISELESS

Family Sewing Machine

IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

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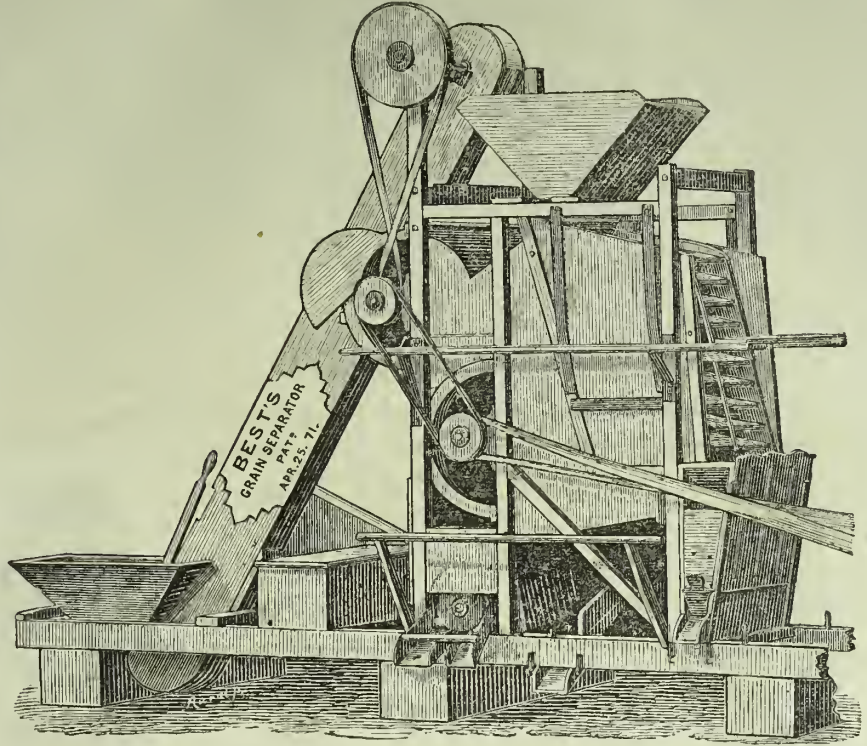
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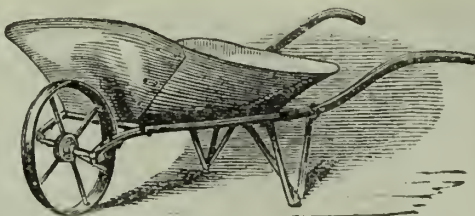
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MONTHLY.

Magazine of America.

Published on the Pacific Coast.

THE **OVERLAND MONTHLY** is now in its EIGHTH VOLUME, and, under such encouraging circumstances, may present the following synopsis of its work, and its past and present brilliant and popular list of contributors to its four distinctive departments:

1. **ESSAYS ON LOCAL MATERIAL RESOURCES.**—We may repeat what we said a year ago, under this head: "The **OVERLAND** presents, in graphic, picturesque detail, the peculiar resources of the Pacific Coast and Territories; avoiding all puffing and advertising of individuals or corporate interests, as well as the dry husks of mere statistics, facts, and figures. The interested immigrant and resident have come to look upon this feature of the magazine as the means of acquiring reliable information in regard to the country, while the general reader has found it interesting by reason of its literary treatment." Among the well-known contributors to this department, we mention the names of Captain Scammon, Arpad Haraszthy, John Hayes, Dr. Henry Degroot, Mrs. F. F. Victor, Judson Farley, Josephine Clifford, etc.

2. **TRAVELS AND GEOGRAPHICAL SKETCHES.**—Under this heading, we call attention to the articles of Mark Twain, J. Ross Browne, Clarence King, Stephen Powers—Pedestrian journeys through the States and Territories—Charles Warren Stoddard—South-Sea sketches—Joaquin Miller—homes of poets—the late Col. A. J. Grayson, R. W. Raymond, N. S. Dodge—noted European places—H. D. Jenkins, Rev. Thomas Condon, William V. Wells, and many others.

3. **STUDIES OF WESTERN MANNERS AND CIVILIZATION.**—It remained for the **OVERLAND** to develop the character of the Western Pioneer, as intensified and heightened in the strange and new civilization of the Pacific Slope. First we had Mr. Harte's unique sketches, which have not been equalled by any of his latter productions while away from his field of inspiration, in connection with which appeared Stephen Powers' studies of "A Piney Woods Character," "Mr. Emery's 'Centipede Bill'" and "Compassee," Mrs. Neill's "Spilled Milk" and "Piscer," Prentice Mulford's characteristic articles—"Balty," "Pete," "Camp," "Jo," etc.; Mr. Evans' "Shakes," Farley's "Roses' Bar," Green's "Dawn," Mrs. Victor's "El Tesoro," and Mrs. White's "Spades." In the domain of fiction, the **OVERLAND** has won the criticism of publishing "the best short stories in any American magazine." Among other writers in this department, we may mention Governor Booth, W. C. Bartlett, Samuel Williams, Noah Brooks, Geo. B. Merrill, B. P. Avery, J. F. Bowman, Mrs. Cooper, Col. Evans, etc.

4. **INDEPENDENT LITERARY CRITICISM.**—A notable feature of the **OVERLAND**'s criticism has been its entire freedom from the ordinary trammels of "publishers'" influence, and this has given it a weight and authority not often found in other American magazines.

The present corps of contributors includes the following: Prof. J. D. Whitney, Stephen Powers, Joaquin Miller, Charles Warren Stoddard, Arpad Haraszthy, Ina D. Conlith, Mrs. S. H. Cooper, Mrs. F. F. Victor, Rev. Thomas Condon, N. S. Dodge, H. D. Jenkins, Leonard Rip, Edgar Fawcett, Prentice Mulford, Mr. and Mrs. J. J. Platt, Captain Scammon, J. F. Bowman, Mrs. Neill, John Hayes, Josephine Clifford, Taliesin Evans, Theodore F. Dwight, Henry Degroot, M. G. Upton, Dr. Ver Meier, W. C. Bartlett, Mrs. White, John C. Cremony, Daniel O'Connell, Wm. V. Wells, Henry George, Judge Hill, Dr. Stout, Josephine Walcott, Gen. J. W. Ames, W. A. Kendall, Therese Yelverton, and many others.

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NORWAY Genuine Norway Oats, raised on hill land, by one of the proprietors of this journal, can be had at this office.

PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, FEBRUARY 17, 1872.

[Number 7.]

The Aberdeen Broadcast Sowing Machine for Corn and Seeds.

We give herewith an illustration of a new broadcast sowing machine, recently introduced into this State, and known as the "Patent Aberdeen Broadcast Sowing Machine, for Corn and Seeds." As its name implies, it had its origin in Scotland, and was awarded the first prize at the Highland Agricultural Society's Show, at Edinburgh in 1860, and again at Dumfries in 1870. One of these machines, the first we believe ever introduced into this State, was exhibited at the last Mechanics' Fair in this city.

Many important advantages are claimed for this machine, among which we may mention the fact that the seed box is placed very near the ground, so that it can be advantageously used in windy weather; it is light of draught, simple in construction, and but little liable to get out of order; the box being hung between the wheels takes all the weight from the horse's back, while the carriage is sufficiently strong to carry a good load of seed to the field. It is provided with patent dish seed dischargers, which are generally acknowledged to be superior to pinions, brushes, caps, etc., etc.

Referring to the accompanying engravings—Fig. 1 represents the machine as it appears when in the act of sowing. The land wheels work on the axles at each end of the box, and support it between them. The seed dischargers are driven by spur gearing from the land wheels. The intermediate spur pinions can be put in and out of gear instantaneously by means of the lever handle in the center of the box, which, together with the two shutting bar handles, is entirely under the immediate control of the attendant. The fore-carriage steering (shown at the right-hand end of the box) may be taken off altogether; or, as shown in the engraving, the steering wheels may be raised and fixed in a horizontal position.

Fig. 2 represents the machine as it appears when traveling along a road or through a gateway bearing its load of seed. The steering wheels are let down and fixed in a vertical position, the two land wheels are placed on the cross axle at the steering end of the box, and the shafts (or pole) are taken off the center of the box and attached to the steering end.

Linforth, Kellogg & Co., Nos. 3 and 5 Front street, in this city, are the sole agents for this machine on the Pacific Coast.

MECHANICS' INSTITUTE REPORT.—We have received the report of the Eighth Industrial Exhibition of the Mechanics' Institute of the city of San Francisco, held at the Pavilion of the Institute in August and September 1871. It is voluminous, comprehensive in detail, and reflects credit upon the Secretary of the Institute, for his endeavors to keep pace with the requirements of the day and the progress of events, in giving a full and complete report of the workings of an institution or association that has already attained a position of interest and importance, second to no other of its class in the world. Its essays upon a diversity of subjects are of the highest order.

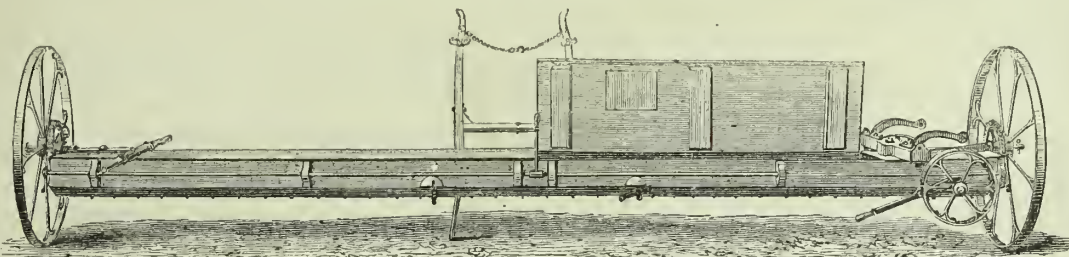
Diversity of Farm Crops.

It is a fault too common with the farmers of California, that they confine their efforts to a single crop, and rely upon the profits therefrom as their only farming income for the year. This is certainly a mistaken policy. A diversity of crops is as desirable in any view we may take of it, as that one should keep a variety of animals upon the farm. No farmer would feel that he was acting upon a sound principle of domestic economy, who having ample feed for the whole year should neglect to keep a few cows, and confine himself wholly to the raising of horses, merely because he prefers horses to do the work of the farm. Nor with an abundance of food in the form of gleanings

time going, except when it is necessary to oil up; and so with the farm; the labor employed must be kept moving, doing something, and during spring time let that something be the rushing in of seed of every variety that the soil is suited for.

Then the season of harvesting begins, and is as constant as was the seeding time; and yet in hardly any instance will it be found that the harvesting of one crop interferes with another, and at the end of the year the farmer who pursues this policy will find himself with one or more of those he has cultivated, bringing unusually high prices, more than sufficient to compensate him for his loss in any one of his other crops, or the lowness of the market price of either of his great staple productions wheat,

Fig. 1.

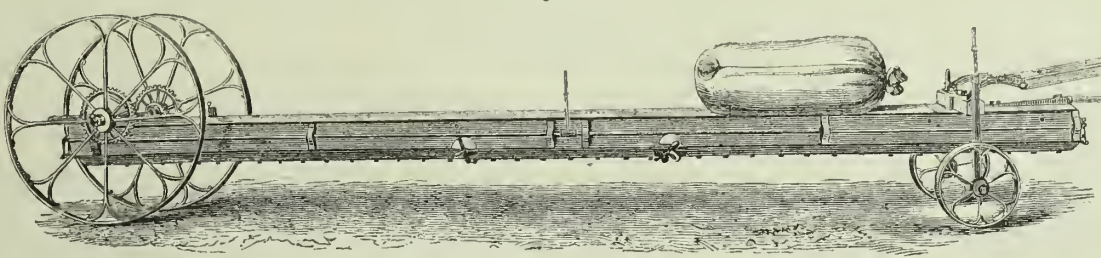


THE ABERDEEN BROADCAST SOWING MACHINE, FOR CORN AND SEEDS.

from the grain field, would he neglect to keep a few hogs, or from the small grain and screenings of the farming mill, to keep a few fowls; it would be greatly to his comfort and convenience, besides the immediate effect upon his pocket, to have these minor sources of income

barley, oats, or hay. The farmer who relies for success upon a single crop as a specialty, be it wheat, barley, hay, or silk growing, may in one year, perhaps, make a fair showing of profit, or he may make so complete a failure, and having no other crop to fall back upon, as

Fig. II.



THE MACHINE AS IT APPEARS TRAVELING ON THE ROAD WITH THE SEED WHICH IT IS TO SOW.

at his command, and almost every farmer does endeavor to avail himself of them.

In every respect it is as necessary to his thrift and convenience that he produces a variety of grain crops and vegetables. Every large, and very many small farmers, keep more or less farm laborers throughout the year, whose time might as well be occupied upon a variety of crops as only one, with results that would tell at the end of the year. It is impossible that a wheat, barley, or oat crop or all these together can keep the farmer actively and profitably busy the whole year; and yet to make farming profitable in the highest degree, it is absolutely necessary that his whole time, or that of his laborers should be so employed.

There is really nothing to prevent the cultivation of this variety of crops; the seed for the small grain crop is all in the ground before the time of plowing for and sowing field peas or planting potatoes, rutabagas and beets, and these again are finished up before the time of corn planting arrives, with its time honored accompaniments of melons, pumpkins and squashes, to which should be added all the usual concomitants of the vegetable garden.

In running an engine or a threshing machine the great point to make is, that it be all the

How Climate Affects the Quality of Wool.

In our last number we remarked upon the effect of food upon the quality and consequent value of our wool product. It should also be understood that climate has much to do in determining the quality of this great staple. The California wool grower has for years noticed a falling off in the finer grades of wool; animals that were producers of the finest wools no longer bear that character in certain localities, whilst in others the difference is not so strongly marked.

European wool growers, such as are termed the fancy breeders, have long known that the climate has very much to do in influencing the quality of their wools; they reason in this way: that beneath the skin are small cells, from one of which each fibre of wool emanates. It may be compared to a minute onion with rising stalk; this fibre of wool after commencing its growth has to penetrate through the pores of the skin; it then becomes visible to the eye, and by its extended growth clothes the animal with a covering, varying in character according to the circumstances of its growth.

Now if sheep are greatly exposed to cold and wet, so that the skin is kept chilled, it contracts and greatly lessens the growth, from a lack of the necessary nutriment to the roots of wool. True, it is made finer, but greatly at the expense of length of fibre. For this reason,

shelter from the force of very cold winds is found to increase the staple of all wools, and prevents an inequality in the size of the fibre. The effect of much wet is to give to the wool more of the character of hair, and this injures its felting character.

Excessive heat has just the opposite effect; the skin becomes warmed, perspiration ensues, which is kept up, the pores become open and a coarser wool is produced; this effect is seen all through the heated valleys of California. The injury is not as great as that arising from excessive cold and wet; but if we desire to produce wool under the most favorable circumstances, with a view of perpetuating the highest qualities of the fleeces, we must endeavor to give what shelter we can from excessive heat as well as from excessive cold. We may say a few words in our next on the importance of careful breeding and its effects on the character of the wools produced.

A WORD TO OUR EXCHANGES.—If the conductors of our regular exchanges in every county of California, with those of Oregon, Montana, Utah, Nevada and Colorado, will take the trouble to publish items of the condition and progress of the agricultural interests of their respective localities, we will be glad to give them further publicity, or give extracts from them, under our standing head of Agricultural Notes. In many cases they may serve the purpose of directing the attention of immigrants to the lands in the vicinity of the places mentioned, as well as to the papers from which the extracts are made, and in other ways conduce to the interests of parties and projects that pertain to the agricultural advancement of the country.

to find himself greatly in arrears if not deeply embarrassed; against which the only real security lies in the annual cultivation of a diversity of crops.

OREGON STATE FAIR.—We have received from E. M. Waite, Secretary of the Oregon State Agricultural Society, a complete list of the premiums awarded at the State Fair in 1871. The pamphlet of 51 pages, also contains the Annual Address and proceedings of the Board of Managers, and Society. The officers for 1872 are: President, M. Wilkins, Lano Co.; Vice Presidents, W. A. Mills, Washington Co., and C. M. Nye, Wasco Co.; Secretary, E. M. Waite, Marion Co.; Treasurer, J. H. Moores, Marion Co. We find that Lorenzo Stewart raised at the rate of 54 bushels of wheat to the acre; Jacob Grozer, 44 bushels. The Address is replete with good practical advice and excellent suggestions.

TO GRAPE GROWERS.—Please bear in mind that an adjourned meeting of the "California Vine Growers", Wine and Brandy Manufacturers' Association, will be held on the 21st instant, and that you are not only invited, but expected to be present. A number of interesting reports and papers will be read, and other business transacted of great interest to the grape and wine producers of the State.

CORRESPONDENCE.

Universal Crop Reports.

EDS. PRESS:—An article from your journal has been extensively copied by the leading papers on this Coast. You attribute therein the suggestion of having our Government obtain the condition of crops throughout the world by telegraphic agency to Lieut. Maury. In several numbers of the *Examiner* I advanced the idea that such information should be given by all nations as a duty to humanity and that our government should ask it under the provisions of an international treaty. I send you a copy of the *Examiner* of July 7, 1870, in which you will find my views at length and which may deserve republication in your journal. In addition I have to state that at my request our Senator, Hon. Eugene Casserly, laid the matter before the authorities at Washington giving my views long ago a favorable endorsement.

PHILIP A. ROACH.

The following is the article from the *Examiner* above alluded to:

The wheat crop is the engrossing subject of attention in the Old and New world. We have had reports by telegraph of short crops in several countries on the European continent, which caused in the present month much active speculation in the grain markets of our country. To what extent a deficiency of supply to meet the demand may exist has not been reliably established. Conflicting interests are at work, and the uncertainty of the reports is doing great damage to the classes who should meet each other on the basis of obtaining a just equivalent under a truthful statement of facts.

Our people as producers, having an immense surplus, are placed, by the condition of affairs, in the position of supplying the wants of millions with abundance at prices that will well remunerate them without exacting famine rates from those whose crops have partially failed. Our immense area of territory sowed in grain is accurately stated annually, according to the most reliable data, by our Agricultural Department at Washington. The yield of the various cereals may be estimated with considerable exactness and were we confined to a home demand the well-known law of consumption would permit the money value of the crop to be at once estimated, and rates per cental of various grains easily established. The home market, however, is always kept in a fluctuating condition by the probable foreign demand; in consequence, prices run higher to our own consumers, and speculation often runs wild in the expectation of a great demand from abroad which comes not.

California has suffered largely from the uncertainty of foreign production in the countries with which we compete. Such erroneous reports have frequently disturbed our market, and vessels have been detained here because cargoes could not be procured early in the season. Our farmers expected higher prices than the grain purchasers here were allowed to give by their orders. Later, after a heavy bill of storage was incurred, our farmers have sold at lower prices than could have been obtained at an earlier period. This loss in money value falling on our farmers was a general one to the State.

There is an easy remedy for the evil which our Government can apply in a few weeks. We have in all the great grain-growing regions of Europe, Consular agents, who, even now, in the course of thirty days, could ascertain the condition of crops in their respective districts, and inform the Agricultural Department at Washington of what surplus over consumption could be spared. This news, imparted by telegraph to our people, would be reliable enough to enable them to obtain fair prices, by meeting the demand, and not withholding from sale in expectation of getting rates not warranted by the actual condition of crops in other countries.

It may be said that private enterprise now performs this duty, but no matter how well performed, people will not act upon it, and even among the most interested and intelligent classes there are believers and doubters of every report. It wants the impartial action of Government. We publish to the world our supply, and give data to what an extent we will have a surplus; other nations ought to do the same, by our friendly invitation. From many reasons we will find a hearty cooperation that will result in mutual benefit.

Every government has an interest in

having the truth in regard to its food supply known. If over abundant it wants the surplus purchased by its neighbors. If short, its duty to its mission requires that commerce should be invited to supply the deficiency in order that hunger may not produce discontent and revolution. There should be an international obligation to perform this duty. The ships that brave the seas ought to know by governmental assistance whether to go for food and where to return with it. Now they seek markets that prove not to be the cheapest—now they bring grain where there is little demand for it, and pecuniary loss follows their enterprise instead of profit.

Our Agricultural Department is well organized for one branch of its service, and renders immense benefit to our people. It tells us what we have produced, but it should go further; by means of our Consular corps it should in time tell whether we should send our surplus, and thus perform a duty which would confer on agriculture what the Treasury Department, by means of its Consular agents, is enabled to do for commerce. The cost of organizing thoroughly the system would be a mere nothing. The cost of telegraphing the results would be very trifling, and the benefit would be that millions of farmers, who are the backbone of the nation, would have accurate information on which to act early in the season before the canals are closed by weather in some regions; and in all, before storage and interest ate up their profits.

Is the D—l in Hogs?

EDITORS PRESS:—You have said "Farmers write for your paper." I will accept of your invitation. I often hear farmers say the D—l has got into my hogs! Well, I don't doubt it; but what let him in? that's the question. I will venture to say that the only D—l that ever gets into a hog, is a hungry stomach. A starved hog is a D—l indeed! But a hog that has always been well fed and cared for, is as innocent as a babe; beautiful to look upon when alive, and pleasant to the taste when dressed and cooked. To feed hogs well is to keep them in ignorance; but starve them and they will become the most thoroughly educated of animals. There is nothing that will acquire knowledge faster than a hog when he is once thrown upon his own resources. Their first business is to study the geography of the ranch; the potato patch is soon located; the wheat and cornfields are laid down in their mental chart with the utmost accuracy; nothing can escape them that will gratify the appetite. It is no use to try to fence against a lot of hungry, famished hogs, if there is anything on the inside for them to eat. Hog nature and human nature are in some respects much alike. If you treat a man as an outcast he will soon lose all his morals; make outcasts of your hogs and they will soon lose all their innocence and become a terror to the neighborhood. The way to raise hogs is to commence feeding as soon as they are able to eat and never stop till you either sell or kill them.

The rule adopted by most farmers that I have known is, to starve their hogs until they break into some mischief, and then poultice their ears with dogs' teeth. Hogs kept in this manner are not profitable. Some folks say pork is not wholesome; I don't think it is myself. That it produces dyspepsia in some people I am certain, but the worst fit of dyspepsia I ever had was caused not by eating pork, but by getting overheated and badly excited in trying to chase my neighbors' hogs out of my premises. I have seen other people look a little unwell from the same cause. I think there have been more quarrels caused by farmers starving their hogs and cattle than anything else, except bad whisky.

But it should be remembered that hogs are not to be blamed for their bad conduct, it is the man who owns them that is responsible. The business of a hog in life is to manufacture pork out of food; if we give him a chance to perform the duty which nature has assigned him, he will be the most harmless of all animals. This is the only way to make hogs profitable. A mill pays only when it is grinding; hogs pay only when they are growing up into pork; this they can't do without feed. There is a great difference in the breed of hogs, but the best breed will soon degenerate if starved, while the poorest breed can be made to improve if well fed and kindly treated. The old saying that corn makes hogs, is true, and should be kept in mind by all who engage in the business of

raising swine. It is my opinion that a hog which has always been kept poor will not be as wholesome when fattened and killed for meat as one which has always been well fed. My reason for thinking so is this: a poor hog will require a long time to get fat; the pen is generally made close and no care is taken to keep it clean; the filth will be constantly accumulating; the air is filled with poisonous odors which the animal is compelled to breathe all the time.

Nothing is more certain than that long confinement in such a place will produce disease in a hog or any other animal; but this will all be avoided when hogs are kept in good condition; for then they will fatten in a short time and not be so liable to become diseased as the poor hog which has to be kept up and fed for months before it is fit to kill. In conclusion I would say to all farmers, feed your hogs well; if you have not the feed to give them, then sell them to somebody that has. There is nothing which looks worse on a farm than a poor, starved hog, with long legs and long nose, bounding off like a deer when any one comes within sight; but respect their rights, give them plenty to eat and you will get along better with your neighbors, you will feel more cheerful in mind and have better health; you will live longer and die happier, and perhaps go to a better place after you die.

Santa Rosa, Feb., 1872.

Notes of Travel in San Joaquin County.

[By our Traveling Correspondent.]

Stockton.

EDITORS PRESS:—Since our travels in this county a year ago a number of changes have taken place in the city of Stockton, and among others, the citizens, profiting by the experience during the past two dry years and the present unusually wet one, propose to adopt a more approved plan of drainage, so that the city will be more healthy and less liable to damage from overflow. A few years ago one of the most enterprising citizens, Mr. Webber, undertook at his own expense to run a canal around the city, for the purpose of carrying off the surface water which came in from the plains during wet seasons. By his plan, the canal would carry this water into the sloughs before it reached the city, but in prosecuting his work he was necessarily obliged to go through lands owned by private individuals, and they, less far-sighted than he, stopped the undertaking by serving injunctions upon him; now, however, when they see the benefit it would have been to them all, they would willingly pay their *pro rata* in order to have the thing done.

Manufactories.

The manufacturing interests of this city have increased largely during the past year and business in proportion. The Stockton Woolen Mills are running up to their full capacity and find ready sale for all their products. The tanneries, of which there are four, have each increased their capacity, and the Pacific Tannery, owned by Messrs. Kullman, Wagener & Co., have added machinery and buildings to their old works so that they now have the largest institution of the kind in the State. The leather manufactured, rates equal in price to any in your market. Matteson & Williamson, manufacturers of agricultural implements, the Stockton Iron Works, Farrington, Hyatt & Co., proprietors, are each running to their full capacity in their different specialties. The Globe Iron Works, now owned by a stock company, are turning out as fine work in the way of mining and milling machinery as your city can boast of. Some 50 or 60 men find regular employment in the different departments of this institution and their machinery has found its way into the principal mining districts in Nevada and the Territories. Henderson & Clark, manufacturers of carriages, wagons, etc., are among the successful men in their line. They are also importers and are local agents for the celebrated "La Belle" wagon, of which David D. Miller, 715 Market street, in your city, is the general agent for this coast.

Stockton Gas Company.

The above-named corporation, with a capital stock of \$250,000, started business in this city in 1859. The capacity of their holder is 20,000 feet; can manufacture daily 60,000 feet; each 5-ft. burner has brilliancy equal to that of 18 candles. The

works are under the superintendence of Mr. H. Adams; the capital stock of this company is principally held in your city.

Post Office.

The post office in this city is the third in size in the State; it has 500 lock-boxes and 26 drawers for newspaper offices and dealers. The number of letters mailed during a quarter is about 34,500, making about 146,000 for the year; about the same number are received, and as many more are sent here for separation. The money orders issued during 1871 amounted to \$45,600.59; orders paid during same time \$20,136.43; over 1,800 weekly newspapers, periodicals, and magazines are received each month independent of what are received by the different newsdealers. The present incumbent was appointed in 1861. Two clerks are employed, although pay for only one is allowed by the Department. In proportion to the number of clerks employed in San Francisco and Sacramento, and the amount of labor performed by this office, three clerks at least should be allowed.

Glorious Rains.

This section in common with others in our State having passed through the ordeal of three dry seasons is now benefitted very materially by the late abundant rains, and the farmers and business men generally are rejoiced over the prospects for good crops the coming year. The principal dealers in agricultural implements Messrs. Jones & Hewlett, and Webster Bros., are doing a lively trade in their line with the farmers, they being among the first to feel the beneficial effects of the wet season.

Fine Stock and Poultry.

In my communication to you from this place last year in mentioning the names of prominent owners of fine stock among whom were L. W. Shippey, W. L. Overheiser, J. W. Hill, Sargent Bros. and Judge W. E. Green, I neglected to speak of the stock of J. B. Damerill, who resides near near Waterloo. His stock is not only large and of fine breed, but among the fastest in the county, having taken off the prizes at several coursing matches. The Hon. John Sedgwick, who carries off the palm for having the finest poultry in this section, and since the decease of the late W. W. Hatch, is the only one making a specialty of furnishing eggs for raising fine fowls.

L. P. MC.

The Ramie Interests.

Perhaps not one-third of all the persons who attended the late State Fair had their attention directed to the few small specimens of ramie cloth that were unpretentiously on exhibition, and of all the number who examined it but a small proportion understood its real value and its significance among the future products of the State. As specimens of strong and elegant fabrics they are not excelled by any cloth except that made of silk, and but little inferior to silk in beauty. There is an interest excited in the production of a plant that produces such material, and this interest must increase, since the few experiments that have been tried demonstrate that the climate and soil of California will produce the ramie in perfection. The cloth on exhibition at the State Fair consisted of many patterns for dress goods, some made of ramie entire and others mixed, some with silk and some with cotton. There is no article superior to ramie for productions of cheap and at the same time elegant and durable dress goods, and if the cultivation of it on a large scale shall realize the expectation that the experiments so far create, the time is not far distant when ramie cloth should be as common as cotton. At the Fair there was a small quantity of the fibre in a coarse state on exhibition. Its great strength is remarkable, which it does not lose when prepared for the finest fabrics. Dress goods as fine and glossy as silk can scarcely be torn at all by the ordinary effort. There is much inquiry relative to the plant among farmers, and we understand there is a ramie company in San Francisco that disseminates information in regard to the culture of the plant and how the cuttings can be obtained. Farmers must not become excited on the subject of ramie cultivation. It is possible that it may prove not so profitable as anticipated. Labor may be too dear, and unexpected difficulties present themselves in separating and preparing the fibre. But it has qualities that commend themselves, and all difficulties must in time be overcome and the article utilized. That it promises to become an important production of the State is hardly to be doubted.—*Sac. Union.*

A new telegraph cable is talked of, between New York and London.

MECHANICAL PROGRESS.

Asbestos for Piston Packing.

We condense the following from the *Engineer*:—Few engineers who have to do with the steam engine are ignorant of the trouble which is met with in obtaining a really good piston-rod packing. Sound hemp, properly "laid up," and copiously lubricated, makes a tight joint for a time; but the period of tightness is usually short, and much friction results, which is very prejudicial in small engines. If hemp is bad in the case of low-pressure engines, it is infinitely worse with high steam. A slow process of carbonization appears to go on, the hemp packing loses its elasticity, and becomes nearly useless for its intended purpose. All manner of schemes have been tried to get over the difficulty, combinations of cotton, india-rubber, and wire gauze. In the latter case the tightness of the joint is no doubt secured by the presence of water and oil lodged in the meshes of the gauze. [No mention is made by the *Engineer* of any metallic packing other than this "wire gauze."] It is still certain that something better than anything hitherto in use is required, and we have a strong belief that this something may be supplied by asbestos.

Asbestos is a mineral fibre, greasy to the touch, and very strong, which can be easily spun or woven if proper precautions are used. Furthermore, it is an admirable non-conductor of caloric, and is practically indestructible by heat. All these conditions are just those which are required in a material for piston packing; and it is therefore somewhat strange that until a very recent period no one thought of utilizing asbestos for this purpose. This packing was first used in America with much success, and it has since been tested in England with excellent results.

The inventor, Mr. J. V. Day, on the 5th of September last read a paper before the Engineers' Institute of Scotland, from which it appears that no matter how high the temperature of the steam, how rapid the stroke of the piston, or how great the pressure of the steam, the packing seems to be unaffected by those conditions. Where the new packing was first used, some of it was taken from the piston-rod stuffing box of a locomotive engine, after having been in, and the engines at constant work, for three months, with steam at 130 lb. pressure, and making an average daily run of 100 miles, including Sundays; and the fibre, (a sample of which was shown), with the exception of being discolored by oil and iron, was just as flexible and tenacious as originally. After having been once disintegrated, it appears impossible to so pack or mat the fibres together that they are not easily separated by the fingers.

Asbestos packing was first used in Great Britain by Mr. Benjamin Conner, locomotive superintendent of the Caledonian Railway, and Mr. Day exhibited to the members of the Institute the packing of a locomotive stuffing box which had been used on that line from the 27th of July, 1871, to the 18th of November, where the ordinary packing lasts, on their locomotives, two months, at most, rarely so long, and the gland requires constant screwing up. The asbestos packing was apparently as good as when put in, and the engine had run a distance of 14,070 miles; during three weeks of which time, although the engine had run 2,000 miles, the gland screws had never been touched.

In the course of the discussion Mr. Conner stated that he had applied it coiled round the piston rod continuously; but he thought it should be applied in rings. The inside of the packing seemed to him as fresh as when first put in. He believed it took less oil to lubricate the piston-rod, for the oil remained on the rod, not being absorbed by the packing. It kept the rod beautifully polished, more so than by any other packing.

Cheap City Transit.

There is at this time no more important question demanding a solution from our inventors and mechanics, than that of cheap transit for the clerk, artisan and merchant from the shop or place of business to the dwelling, which points, in a large city, must of necessity be quite widely separated.

To this must also be added the better housing of the working classes, now imperatively urged as a necessary means of national progress. It has been proved that the largest source of profit to transit

companies is "third class"—in other words, the great masses of working humanity. The humanizing influence of gardens may be accessible to some of the families of working men, as distance vanishes by mechanical facilities. If commercial stimulus induces progress in this direction, it will be a great advance on the morals, prosperity, and happiness of our great commercial and manufacturing cities; but till we can get mechanical power substituted for horse flesh as the means of transit, we shall be as far behind in the results as are omnibuses and stage coaches compared with railways, at a given cost, doing only one-eighth of the work.

Next to cheapness is the necessity for increased speed. The average speed of the horse car is about four miles per hour, and that is accomplished only with serious distress and wear to horse flesh. What we need in this direction is the power to increase or diminish our speed at pleasure, according to safety. We cannot do this till we are able to resort to the power of steam or elastic gases. One great reason why we have not done this is because we have not yet produced an engine combining simplicity and efficiency with tortuous transit. Our ordinary railway engines can only run on large curves, and then at a great cost and waste of power. They cannot run at all, practically, on such short curves as are required for the ordinary purposes of street railroads. The control of the steam blast and smoke is another matter which has not yet reached a satisfactory conclusion. The discharge of steam must be so controlled as to be comparatively noiseless, while the consumption of fuel must be so perfect that nothing but the absolutely invisible products of combustion are thrown off.

Revolution in the Method of Grinding Substances.

The principal applied in grinding substances has thus far been always a crushing between two hard surfaces combined with a motion of one or both, as in treating cereals, paints, drugs, and in general most things which we wish to subdivide finely.

It has been reserved for our time, says the *Manufacturer and Builder*, to make a new application of a well known mechanical principle in order to accomplish grinding or pulverizing by the effects of high velocities, from which some startling results obtained by bodies moving with great rapidity have been known for a long time; such, for instance, as firing a candle from a musket through a wooden board; cutting, by means of a rapidly-rotating disk of paper, substances much harder than paper itself; incising figures on glass by rapidly-rotating disks of metal etc., in all of which cases the velocity of the candle or paper compensated for its softness, and the velocity of the motion of the molecules, constituting the soft substance, produced unexpected results.

This same principle of high velocities is now being applied to grinding—a very different and more useful operation, and, in fact, one without which man can scarcely exist. The barbarian grinds, or rather crushes his corn by means of a bowl and rolling stone, or a mortar and pestle; while civilized man thus far has crushed his cereals between rotating stones. This is altogether to be reformed.

The New York Attrition Pulverizing Company make machines after Ryerson's patent, obtained two years ago, in which high velocity obtained by centrifugal power accomplishes the object without crushing. The difference in the power required for grinding by the old and new systems is most striking. For grinding 3 tons of marble or plaster to a powder, the power required to drive common Ryerson stones is from 2 to 3-horse power, while in this machine a single horse-power is sufficient to accomplish this, while it is also able to impalpably pulverize quartz as well.

[The principle of the Ryerson machine has been tried in this State for reducing quartz, with unsatisfactory results. It is possible, however, that his more recent patent may comprise improvements which have rendered the principle a practical one.—ED. PRESS.]

MEASURING THE SPEED OF SHIPS.—The reel hitherto used to measure the speed of ships is another time-honored institution that is passing away. The rhysimeter is an instrument which permanently connects the water with an indicator in the captain's room, marking the exact speed at all times.

SCIENTIFIC PROGRESS.

Current Scientific Progress.

Scientific investigation was never making more active or earnest progress than at the present time; and in no department of research is this progress more manifest than in that of

Chemistry.

In which several new substances have been brought to light within the past three or four months. Among them are mentioned *regianine*, discovered in the walnut; *acridine*, a new substance derived from anthracene; *carnine*, found in flesh, etc. Within the period mentioned, Solet has also announced the discovery of two distinct spectra in the flame of sulphur. In

Astronomy

The principal interest has centered in the observations connected with the return of Encke's and Tuttle's comets. Some most interesting spectroscopic observations on the light of these bodies have already been announced, and others may be expected. The eclipse of the sun in December last has also furnished an important field of research. Two new asteroids have also been announced, making the number of the series, so far as now known, 117. In

Meteorology

Constant and satisfactory progress is being made. The establishment of the Signal Service of the United States is an important movement, and gives promise of much practical as well as scientific utility. A paper has been published by Strentz which shows as to the result of a careful comparison and study of numerous observations, that the moon does not exercise any appreciable influence upon the weather, contrary to the common idea, and the opinion of some eminent writers. In

Terrestrial Physics.

We have some interesting reports of experiments in India with the pendulum for the determination of the mass of mountains, from which it would appear that the density of the earth, at the surface decreases as we proceed from the sea coast to higher elevations and mountain ranges. These observations and conclusions are highly interesting. Preparations are also being made for a series of pendulum and thermometric observations at the Mount Cenis tunnel, from which interesting results are expected.

Geography

Has been essentially advanced, by the publication of various memoirs and reports of expeditions, among which may be particularly mentioned the trip of the Ice Bear, which left a northern port of Europe only in May last, and returned in October, having penetrated to 79° north on the 43d parallel of East longitude. An open polar sea was easily reached.

The departments of engineering, mechanics, technology, zoology, and physiology, have also received many valuable contributions.

FLOWERS AS DISINFECTANTS.—Professor Mantegazza has recently discovered that ozone is developed by certain odorous flowers. A writer in "*Nature*" states that most of the strong smelling vegetable essences, such as mint, cloves, lavender, lemon, and cherry laurel, develop a very large quantity of ozone when in contact with atmospheric oxygen in light. Flowers destitute of perfume do not develop it, and generally the amount of ozone seems to be in proportion to the strength of the perfume emanated. Professor Mantegazza recommends that in marshy districts and in places infested with noxious exhalations, strong-smelling flowers should be planted around the house, in order that the ozone emitted from them may exert its powerful oxidizing influence. So pleasant a plan for making a malarious district salubrious only requires to be known to be put in practice.

CURIOUS FACT (?)—At a recent sitting of the French Academy of Sciences, a curious communication was received from M. Zaliwski, which, if it were borne out, would be invaluable to navigation. He states that if a hollow cylinder made of thin materials, open at the top and provided with a sharp-edged bottom, be properly ballasted and then put into a tub or other vessel filled with water, it will soon move in a never-varying direction from west to east. The round tin boxes in which concentrated milk is preserved will do perfectly for the experiment, which will become more and more perceptible the oftener the same cylinder is made to do duty in that way.—*Engineer*.

The Origin of the Heat of Fire.

The origin of the heat developed during combustion has hitherto been a profound mystery. In the beginning of this century it was suggested that a portion of the specific or of the latent heat of the bodies consumed was set free during the process of combustion; but this idea was soon overthrown, as it was found that the products of combustion often possess more specific heat, and almost always more latent heat, than the bodies themselves did before burning—that is, before chemically combining under evolution of heat.

To illustrate:—the specific heat of oxygen is 0.21, and of hydrogen, 3.4; if, now, 8 lbs. of oxygen combine with 1 lb. hydrogen, forming 9 lbs. of water, the specific heat of the mixture must be $8 \times 0.21 + 1 \times 3.4$, or 5.08; this, divided by 9, to find the heat per 1 lb., gives 0.56. Now, the product of this combustion, which is water, has a specific heat of 1, nearly twice as great; but, before becoming water, it was first steam, of which the specific heat is only 0.48, but which, by its condensation, gives off not less than 966 units of latent heat. Hence arises the question:—Whence comes all this intense heat of combustion, and the subsequent great amount of latent heat, when the resultant substance in the end possesses more specific heat than its elements before combining?

It is curious to remark that some eminent physicians have concluded that combustion must be "an electric phenomenon," but that scientists, who have studied its laws, should use this pretext for explaining fire, solar heat, volcanoes, and even earthquakes, seems almost incredible.

Notwithstanding the laws of heat and of electricity have been thoroughly investigated, we are not as yet sure of their ultimate nature; one thing only appears certain, namely, that neither is a fluid, penetrating matter, but that both are mere motions of the molecules or atoms of matter. Beyond that all is mere conjecture.

WHAT IS GOING ON IN THE SUN.—Recent investigations of the sun and other heavenly bodies, by means of the spectroscope, have revealed the fact that all matter may be in a more than gaseous condition—in-candescent gas of so high a temperature that the elements are dissociated; that is, that all chemical affinities are destroyed, and each element exists separately in its uncombined condition, notwithstanding it is intermingled with the others. A descent from this exceedingly high temperature to that in which the chemical affinities can manifest themselves results in the combination of the gases.

The chemical affinities of the different elementary substances thus manifest themselves only between a comparatively limited range of temperature, below and above which they do not operate. Even as at an extreme cold no combinations can take place, so at the extreme heat of say 8000° Fahrenheit, not only no combinations take place, but all compounds are separated into their ultimate elements. On cooling and reaching 4000° or 3000°, or thereabout, the volatilized substances, or gases, will again combine, the chemical affinities come into play, and combustion will ensue, the heat of which will again originate partial new dissociations. This is what continually appears to take place in the sun.

AGRICULTURAL CHEMISTRY.—It is a well-established fact that the quantity of nitrogen contained in cereal crops frequently very far surpasses the amount contained in the manured earth from which they are grown; and the manner in which the additional nitrogen has been acquired is one of the many puzzles of agricultural chemistry. That it is derived from the air, there is no question, but in what manner? Has it been absorbed by the plants directly from the air, or has it been first withdrawn from the atmosphere by some of the constituents of the soil, with which it could form compounds which were capable of vegetable assimilation? M. Deherian seems to have succeeded in demonstrating what was never before suspected, that in the presence of organic matter oxygen combines directly with nitrogen, forming a compound analogous to the ulmic or humic acid, produced by neutralization by an acid of the potassic solution of garden mould. Into a perfectly dry tube he introduced oxygen, nitrogen, ammonia and glucose, and on heating the mixture finds that a black nitrogenous matter is formed, while at the same time a portion of the nitrogen disappears from the atmosphere of the tube.—*Les Mondes*.

Santa Cruz Farmers' Club.

[Reported for the Press by ROGER CONANT.]

The Club met at Santa Cruz, Feb. 3d, at 1 o'clock P. M., President Mattison in the chair.

Mr. Locke, from the Committee on the Fence Law, made the following report:

"We believe that the farming interests of this county require a fence law, compelling every landholder, whose lands are in use, to put up and maintain his just proportion of division fences for the following reasons, viz:

First—We have an abundance of the best and cheapest fencing material.

Second—From the broken nature of most of our agricultural lands, stock growing must always be an important part of every farmer's business. After some discussion on the merits of the report it was adopted.

The second part of the report, relating to a trespass law for Santa Cruz County, was referred back to the Committee with instructions to report at the next meeting of the Club.

The following resolution was then offered by Mr. Conant and was adopted.

Resolved—That a copy of the report just adopted be forwarded to our representatives in the Legislature, as the sense of this Club, and that they be requested to use all honorable means to secure the exemption of Santa Cruz County from the effects of any repeal of our fence law."

The Cattle Disease.

Dr. C. L. Anderson, from the committee appointed to examine into a cattle disease in the vicinity of Santa Cruz in September, 1871, made the following report:

"Gentlemen of the club: The cattle disease to which our attention has been called for some time past, may be described as follows: The first symptom is a desire to rub some part of the body, usually the nose, ear, jaw, leg or side. Milk cows appear the most susceptible. The animal uses its feet, or any other convenient object, as a tree, fence or post, to rub with or against. The itching seems allayed somewhat by the friction for a moment, but returns with gradually increased violence until the hair and skin are quite torn off. The parts swell and fill with a serous fluid as the disease advances. The animal becomes frantic, running, bellowing, and finally dies from apparent exhaustion, from eight to twenty hours from the first symptoms. Sometimes they bloat before death. The itching or frantic movements are spasmodic. But little derangement of secretions are noticeable. No fever, and the circulation at first is normal, becoming weaker and more rapid towards the last. One case, the last fatal one, shows no itching, but there were spasmodic jerkings, and it died apparently from violence of spasm.

Fatality of the Disease.

Mr. Ruffner, out of a herd of nice milk cows, all in good order and with calf, lost seven. But one recovered of those attacked, and she had none of the characteristic symptoms of itching and frenzy. Another case occurring subsequently at another place, the symptoms were somewhat different. The cow would whirl around and was frantic spasmodically. These symptoms only lasted a few hours, and the animal recovered within a day. This one had also been feeding for several days in a lot with hogs. Treatment, so far as practiced, has had but little effect. Bleeding, scarifying, purging, hot, cold and stimulating applications, boring the horns, splitting the tail, and many more remedies too tedious to mention, and too cruel to practice, were tried without success.

In order to arrive at the pathology of the disease, several *post mortem* examinations were made. The first developed effusion of serum and partial softening of the brain near its junction with the spinal cord; and there was inflammatory signs for an inch or two along the cord and nerves to the ears and nose. The other organs of body were normal.

The second show a healthy condition of organs and brain except in the left side of the head. There we found what had been an abscess or an ulceration of long standing. It occupied the tympanum and eustachian tube, which cavities were filled with about three ounces of solid matter, and incased with a bony wall. This abnormal condition was not the cause of the disease, but coincident with it. On tracing the ear nerve on that side to the brain, we found inflammation, effusion, and softening at that point. The itching and rubbing were also on that side of the head.

The third and last one examined shows violent inflammation, with slight effusion at and near the junction of the spinal cord with the brain. Nothing else about brain or body indicating disease.

Cause of the Disease.

As to the cause of this disease we believe that it has in nearly every case been traced to *hog poison*. Feeding cattle and hogs, in the same pasture has, we understand, been looked upon as dangerous for many years. Mr. Ruffner's cows had been fed with hogs, or allowed to run where he had been feeding his hogs for a short time before the disease broke out. Hearing of a similar disease in Iowa last summer, we have corresponded with the parties there, and learn that the cows had been feeding with hogs, and that with a change of pasture the disease subsided. We have met several persons who are confident in the hog poison theory—having, as they say, had indisputable proof of its correctness. But why such almost universal silence on a fact so important? This is as great a mystery as the disease itself. Agricultural journals and books seldom or never mention the fact. One book published some 30 years ago on cattle diseases, under the name of "Mad Itch" describes this disease and says that it is "supposed" to be caused by cattle feeding with hogs. Doubtless thousands of cattle are lost every year from this cause, and yet our writers on "Diseases of Cattle" are in utter ignorance of its existence. If it is a fact, and all our investigations seem to confirm it, every means should be used to make it generally known.

Nature of the Poison.

We need not speculate as to the nature of the poison. It is in some respects like hydrophobia in its operation, arising in this case from the saliva of the hog. Whether the disease may be communicated from one animal to another, as in hydrophobia, we cannot tell. The diseased condition of the brains of the cows examined would hardly be considered a cause but rather a *consequence* of the terrible agitation of the nervous centres. The probability is that a *post mortem* examination of a case at the first symptom of the disease, would reveal nothing abnormal. We would respectfully recommend that this report or the substance of it be sent to the United States Department of Agriculture with a request that an investigation of the subject be made and that in due course of time this Club be furnished with the results.

On motion the report was adopted, and the Secretary was instructed to forward a copy of the same to the Department of Agriculture at Washington.

Dr. Anderson stated that a disease was now raging among the cows on Mrs. Errington's ranch, at Scott's Valley, and he desired to know if any member understood the nature of it? Mr. Locke said that it probably resulted from the cows eating the wild turnip, large quantities of which grow on the ranch.

On motion, Mr. Locke was appointed a committee of one to investigate the matter.

Adjourned to Saturday, Feb. 17th, 1872.

White River Valley.

In our issue of Feb 3d we published an extract from a letter in reference to the White River Valley, which, it appears, did not convey the real views of the writer, and indeed was not intended for publication. The writer asks us to publish the following, as more fully and correctly giving the facts in reference to that valley, which is situated in Nye county, Nevada:

What I designed to say was this, that the present natural flow of water was a scanty supply for the best bottom lands, but that I was trying to get Congress to make a small appropriation for sinking artesian wells, to demonstrate the possibility of obtaining a full supply for irrigating all the lands suitable for cultivation, which I was satisfied could be had; when White river, or Sierra Valley, as it is sometimes called, could raise enough grain for all Eastern Nevada.

As to the productiveness of the soil, and all other matters stated, I still say, it equals the Mississippi Valley in its productiveness. This may be said of all the valleys east and south of this, but there is generally a scarcity of water. Some of these valleys are large enough for counties, with plenty of springs, but not water enough for irrigating a hundred acres. Such valleys are worthless, except for grazing; but by the means of artesian water they would immediately be worth ten to twenty-five dollars per acre. I believe certain localities are suitable also for

fruit raising, as wild cherries, currants, and other berries mature through all this county, in the foot hills. I intend to try apples, peaches, plums, cherries, grapes and strawberries, in a small way, if I can procure them in time, this spring.

A. D. ROCK.

Sacramento Farmers' Club.

The Club met on last Saturday, President Baker in the Chair.

A. S. Greenlaw and J. R. Johnston each read a practical essay on "How to Make Fruit Culture Pay," each giving many valuable and practical hints, drawn from an extensive personal experience. The essays drew out an interesting discussion:

Cummings—I have been much interested in the essays just read, but he would name another matter, which he had learned as a fruit-dealer was very necessary, to make fruit growing pay. It is putting up fruit for market. All fruit should be sized, and specimens of a uniform size packed in the same box. This would ensure uniformity of quality in the top and bottom of each box. The man that would adopt this plan of packing and honestly adhere to it, would soon obtain a reputation that would sell his fruit at the highest price in any market. He had sold the fruit of two neighbors, having orchards about the same size and age, and containing about the same varieties and qualities of fruit. The one packed his fruit well and neatly, the same varieties and sizes together, and his fruit commanded at all times the highest and very remunerative prices. The other would put Spitzenburg's Swaar apples and other varieties of all sizes, in the same box, and the result was they would not sell at any price, and consequently fruit growing to him did not pay. Dried fruit should be kiln-dried to kill the insect eggs, as well in this State as in any other country.

Haynie—I notice Greenlaw in his essay says be careful that the buyer gets what he buys, and put your fruit in the hands of the consumer as direct as possible, and with as little expense added, and stand ready to fill all orders. This would do for a man living close to the city and who watched the post-office and express-office; but what of the man who raises fruit at a distance from any market? You would compel the farmer to be a merchant as well, and while he should be at home gathering his crops you would have him doing the legitimate business of the commission merchant, and robbing the merchant of his commissions.

Greenlaw—I mean just what I say, whatever a man raises he should get into the hands of the consumer with as little expense and as direct as possible. If it becomes necessary to let it go through the hands of a commission merchant, select the man who will be satisfied with small commissions and to make his money by attending to his business, by making quick sales and quick returns. We have too many middle men, too many commission merchants, too many non-producers. Again, one of the conditions I lay down as necessary to make money out of raising fruit is that you must locate with reference to a market just as much as with reference to soil and climate or any other circumstance.

Haynie—I did not intend to convey the idea that I disagreed with Greenlaw about marketing the products of the farm. He had some experience with commission merchants. He had been a hop raiser and when he commenced he supposed it was necessary that his hops should go through the hands of the hop merchant; but he soon found that they consumed his profits, and for three or four years the commissions starved him and his family. They created hop corners, choking the producer and practicing extortion on the consumer; finally he got free from them; he went direct to the consumers, and sold direct to the brewers, got his hops direct to the consumers; then he began to realize some profits himself, and this I think is the true way for the farmer to do when he can.

Aiken—I endorse the position taken by both gentlemen in their essays—the character of a man's fruit—and consequently the question of profit or loss is in his own hands. It is true that a farmer can't be a merchant and farmer at the same time; but he can create a demand for his products by producing nothing but superior articles.

Specimens of five varieties of apples were laid on the Secretary's desk: 1st—White Winter Pearmain; 2d—Baldwin; 3d—Smith's Cider.

They were assigned position as to value as above numbered. The Smith's Cider is a fall apple; but the specimens were packed green and had kept quite sound—though they were deficient in flavor. Harbison remarked: that the Baldwin was a much better apple for the mountains than the valleys, and while it was a fall apple in the valleys it was a very fair winter apple in the mountains.

The other two specimens were nameless and were laid over for consideration at next meeting. Mr. Henry will send to the Club a number of seedlings, produced at Forbestown, to be discussed and named.

The subject of grape culture, and varieties for special purposes, and fruit culture on the red lands will be discussed at next meeting.

ONE REASON for the popularity of the RURAL PRESS is the fact that it possesses in its columns some attractions for each member of every intelligent family—old and young.

California Manufactures.

We have received a pamphlet possessing merit, entitled "An Essay on the Manufacturing Interests of California, the Causes that impede and those that would aid in their development." By W. G. Morris, U. S. Marshal, and H. C. Bennet; "and published by permission of the Mechanics' Institute. If we premise the figures and tabular statements contained therein to be correct, which doubtless they are in the main, it presents a very favorable showing of the mechanical and manufacturing interests of California.

It gives the number of industrial establishments in the State in 1870 as 6,515; but estimates that of this number fully three-fourths are boot and shoemakers, tailors, blacksmiths, bakers, carpenters and other branches of industry usually found in most town and villages. After deducting these and a few other minor industries, the real manufactures of the State are summed up as follows:

List of Manufactures.

Four agricultural implement makers; 1 bagging weaving mill; 6 billiard table makers; 5 boiler makers; 8 boot and shoe factories; 8 box makers; 13 corn broom makers; 33 brick makers; 2 brush makers; 2 candle makers; 21 Carriage and wagon makers; 3 cement pipe makers; 4 chemical works; 75 cigar makers; 2 cordage makers; 1 file cutter; 150 flour mills; 2 glass works; 2 gold beaters; 6 harness factories; 12 hatters; 1 hydraulic cement maker; 6 jewelers and silver plate makers; 1 lead pipe and shot factory; 3 smelting works; 1 linseed oil works; 60 machine shops and iron foundries; 2 metallurgical works; 3 pail and tub factories; 2 paper mills; 1 piano forte maker; 20 planing mills; 1 powder works; 1 rolling mill; 10 salt makers; 1 saw maker; 22 sash, door and blind makers; 16 shingle mills; 300 saw mills; 10 ship builders; 10 soap makers; 3 soap root curlers; 1 starch maker; 8 straw hat makers; 1 stone (artificial for building) maker; 2 sugar refineries; 40 tanneries; 50 tinmiths; 6 trunk makers; 3 type foundries; 3 wire workers; 6 woolen mills.—Total 954.

There are certain industries quite peculiar to this State, among them are the asphaltum mining, petroleum collecting, making borax and sulphur, mining chromic and other ores of iron, and curling soap-root as a substitute for horse-hair. The latter is quite a new industry and employs a capital of nearly \$50,000, with 60 men, and machinery and engine of 40-horse power. The value of the product is nearly \$100,000 annually, and is steadily increasing, because this material is the best substitute for hair ever discovered, and grows in unlimited quantities in all the foothill districts in the State.

The number of persons employed in manufactures, according to the Federal Census returns, is 36,626 men, 1,253 women and 850 boys. These figures, if subjected to similar analysis, show that less than 5,000 men, not more than 300 women and only about 400 boys are employed in manufacturing in the whole State. Of the boys employed, 90 per cent. are engaged in the printing business.

The capital invested in manufactures, according to the Census, amounted to \$76,947,310. If from this amount be taken the capital invested in mining enterprises and other branches of industry not properly classed as manufactures, the amount employed does not exceed \$20,000,000. Estimating the capital employed in each of the above 954 establishments at \$20,000, which is far above the actual figures, the amount would not reach \$20,000,000.

The total population of California is given for 1870 as 560,223. Imports of manufactured goods by sea are set down at \$26,504,500. Imports by Central Pacific Railway \$5,300,000; total of imports \$71,063,688. Exports for the same year, merchandise by sea \$17,840,160. By railway \$2,750,000. Treasure by sea and railway \$32,983,140. Total of exports \$53,581,300. If there is no material error in the above estimates and figures, there would seem to be a balance against us of \$17,482,388. The pamphlet goes on to show in its way, the causes that operate against the manufacturing interests; the costs to the people of California in maintaining a metallic currency; the effect of savings banks on the manufacturing interests, how capital control these interests, etc., making a very readable, interesting, and we presume reliable work.

EXPLOSIVE BUCKWHEAT. — A barrel of buckwheat flour exploded recently at Keokuk, Iowa. A man of science calmly says that the buckwheat was probably wet, and being confined in the barrel, an alcoholic vapor was generated, which ignited as the lid was taken off and a lighted candle brought in contact. This is all very well, but whom or what can we trust when the staff of life goes back on us like gunpowder or nitro-glycerine, and a barrel of slajack timber turns out a self-constituted infernal machine?

THE proverb says—"Hunger sweetens beans;" but a venerable housekeeper says she has always found molasses the best to use.

AGRICULTURAL NOTES.

CALIFORNIA.

FRESNO COUNTY.

Expositor, Feb. 7: People have learned that where irrigation can be accomplished, and in a large portion of our county this great desideratum is now placed at public command, our warm dry summers do not act as a drawback to agriculture, but on the contrary, affords an opportunity of raising two crops per season. The soil of the fertile plains of Fresno, is a species of loose, sandy loam, termed by old settlers, and those hostile to agriculture, as sand heaps, but which with irrigation, and proper tillage can be made to produce abundantly. All this land is open to pre-emption and homestead. By sinking wells and erecting windmills, on this land, fine vegetable gardens may be made to flourish the year round. We would here say that so mild is our winter climate that tomato vines have been known to grow through the entire winter in the open air, and we have, ourselves during every month of the past winter ate nice lettuce grown without the aid of any artificial means, but exposed to the effects of the winter. We incline to the opinion, in fact, we think experience will carry us out in our assertion, that all of the tropical and semi-tropical plants and fruits may be grown in this county with great success.—We are confident that the orange and lemon could be more, or equally as successfully grown within the limits of Fresno, as on the mild and fertile peninsula of Florida. All that is wanted is energy. We want energetic, sturdy settlers to come in our midst and occupy the languishing soil and till it.

KERN.

Courier, Feb. 3: We have occasional light frosts, but no ice or snow. Our winters resemble the month of May in the States north of the Ohio, in general temperature, but there is less rain and the atmosphere is clearer.

Everything that grows in both the Northern and Southern States is found to do well here, including all the cereals, particularly Indian corn, which flourishes with great luxuriance, and cotton, rice, tobacco, sugar cane, etc., with many of the fruits of a tropical or semi-tropical nature, such as the orange, lime, pomegranate, olive, etc.

The four seasons as they are known in New England, do not exist here. Properly there are only two, the wet and the dry. The wet season lasts about four months, from December to April. The rest of the year rain very rarely falls, the sun shines brightly, and the atmosphere is clear and dry. Freshets or overflows are of very rare occurrence.

Kern river brings down a large quantity of water, but as the current is very rapid it is neither wide nor deep.

The rain-fall in the valley is inconsiderable, and the snow, which falls to a great depth in the mountains, melts slowly as the sun travels northward. The river is fullest about the time the water is most needed for irrigation.

Its great fall enables it to be easily utilized for irrigating purposes.

We are on the line of the Southern Pacific Railroad of California. This road will reach here the latter part of next summer.

There are plenty of government lands subject to pre-emption and homestead. Also plenty of railroad lands, which may be obtained on easy terms.

LOS ANGELES.

Californian, Jan. 27: ANAHEIM.—Our town has regained much of its old time business vigor since the advent of a better season. The streets are crowded with teams, the merchants are busy, and the farmers are buying all the seed and agricultural tools to be had. The vineyards have nearly all been pruned, and look trim and neat. Fields of grain are gradually spreading over all the plain outside the city, looking green, bright and cheerful. Many pieces of land are being sold every week to actual settlers, and population is steadily increasing. A bright and prosperous future is before Anaheim.

MEROED.

Argus, Feb. 3: Large tracts of new ground have been plowed and planted in grain, and all the old—the cultivated lands of former seasons—have been volunteered or sowed down with grain, increasing the average of tilled land in this county to double or treble that of any former season. We have no data upon which to base a calculation of the number of acres already planted, but as the broad plains are dotted

everywhere with new buildings and large tracts of newly planted land, the reader may form some idea of the extent of farming operations in this portion of the great San Joaquin Valley. Farmers are also pushing their operations high up on the foothills. During the past two seasons of drouth the foothill lands have proved far better for farming than the low valleys, and notwithstanding the assertions of stock men and newspapers devoted to their interests, farmers in the foothill regions are clamorous for a No-fence law to protect them from stock, and enable them to cultivate their little fields and harvest their products in peace. Up to this time the young grain looks as well as we have ever before seen it under the most favorable circumstances until the middle of March, we may look for an extraordinary yield of the cereals.

NEVADA.

Transcript, Jan 30: On a former occasion we spoke of Elijah Tompkins wintering a flock of Cashmere goats at Bear Valley. We have since learned that out of a flock of 150, not one has died this winter. They are in excellent condition, and the severe winter and deep snow at Bear Valley seem to agree with them, for they thrive splendidly. The snow in the valley is from three to four feet deep, and on the ridge separating the valley from Diamond Creek, it is from six to seven feet deep. The goats frequently climb to the summit of the ridge, 1,500 feet above the valley, and nearly 6,000 feet above the sea. They browse on the pine and cedar twigs, manzanita bush, and other shrubs that grow on the ridge. True to the instincts of the goat, they are fond of climbing, and unless restrained by the herder, will go for the highest and rockiest point they can find. Mr. Tompkins' experiment is proving a splendid success, and we presume many other citizens of Nevada county will follow his example, and go into the business of raising cashmere goats.

SANTA BARBARA.

Signal, Feb. 3d: The extent of land cultivated here this year will be 50 per cent. greater than that of any former year, and there never was a finer prospect for a larger yield. What a pity we have not the population to till the thousands of acres of beautiful valley land that will lie idle for the want of it.

A PRECOCIOUS OLIVE.—Father Juan Comopla tells us of a young olive tree he has in his garden, planted from a cutting three years ago, that bore seven gallons of olives this year. Is there any other kind of a fruit tree that will produce as much at that age? Plant the olive!

A SEA OF SHEEP.—Thursday morning 3,800 sheep passed through here on their way to the San Francisco market. They were fat, clean and beautiful. These vast flocks that cover our green hills and vales present a truly interesting sight.

San Buenaventura is growing like a mushroom; but outsiders need not infer that it is a "mushroom growth," except only as regards rapidity.

The *Times* has the annexed: Parties are busily engaged in extending the wharf, so the steamer can discharge their freight conveniently.

"Excelsior" is the motto of the day. It is, indeed, an era of progress. Santa Barbara keeps pace with the times, and is not behind larger and more pretentious towns in moral, physical and material improvements. There are no signs of apathy or indifference on the part of her residents. Improvements are constantly and rapidly going on in every part of the town.

THE PRESS says: The climate of Santa Barbara is the finest in the world. There is no place with which it can be fairly compared. Its healthfulness has been proved by long recorded statistics, and is recognized by the highest medical authorities in the land. Here the State Sanitarium will be erected, and the valley, from ocean to mountain, will be a resort for health and pleasure.

SANTA CRUZ.

Pajaronian, Feb. 1: THE PAJARO VALLEY.—This fine valley, one of the choicest spots in California, lies along the Pajaro river, which empties into Monterey bay, and is partly in Santa Cruz and Monterey counties. It has, within a few months past, been brought into railroad connection with San Francisco via Gilroy.

The Pajaro Valley is famed for its beauty, and its fame does not belie it. It is no exaggeration to call it one of the garden spots of the world. Thoscenery has a soft and quiet beauty all its own. It reminds one now of Savoy, now of North Wales, now of Mohawk Valley. It has a matured, settled look, as if the people who lived in it were

satisfied with their choice of a home, and meant to stay. One no longer sees the miserable, unthrifty California ranch hovels, but tidy, tastefully designed farm houses, with pretty lawns and garden plats and flower beds in front. It takes one back to Central New York. The eye is lost in a wilderness of floral sweets. And the soil is so wonderfully fertile. Life oozes from every pore. "We never miss a crop," is the universal boast of the people. Such a wealth of fruit and flower—of cereal and vegetable! It is nature squandering her treasures. Everything that grows seems to grow with all its might. The pumpkins are colossal—the corn stalks Brobdignagian. Think of fifty and sixty bushels of wheat to the acre in this year of grievous drouth.

SAN DIEGO.

The prospects for the crops are very encouraging in San Diego and the entire southern half of California.

Jan. 25: Last year we produced about 30,000 bushels of grain; this year we shall produce 600,000. Last year there were 30,000 fruit trees and 90,000 grape vines planted in this county. By the close of the present year we shall have 200,000 fruit trees and 1,000,000 vines growing within our borders. More trees have been planted in this county since the 1st of January, 1872, than during the two years preceding; vines are being planted everywhere. Our estimate will be within the mark—not above it.

Union, Feb. 3: Mr. Edward Dougherty has on exhibition at his saloon on Fifth street, a genuine natural curiosity, in the shape of a petrified potato. The "spud" was evidently of the Irish variety, in its original state, but at present it could hardly be classed as a mealy specimen of that incomparable vegetable. The potato shows plainly the places where the eyes once existed, and has also the little sprouts which usually spring from potatoes when left in the ground attached to it. The latter are as hard and brittle as the potato itself, which on the score of solidity and weight would be entitled to a prize at any agricultural fair. The curiosity was dug up in town.

We have received a specimen of oysters from the Bay of San Diego, which we pronounce the best we have seen on the coast. They are much superior in flavor to the Shoalwater Bays, the peculiar coppery taste which distinguish the latter being entirely absent.

SAN DIEGO OLIVES.—Mr. Davis brought to town yesterday a quantity of pickled olives. These olives are some of the nicest that have ever been put up at the old Mission orchards, and should certainly meet with favor as a relish upon the tables of our citizens. A lot of oil will soon be ready and will be sent to town to be offered for sale. The oil from this orchard in past seasons has always been of an excellent quality, and it is supposed that it will surpass in fineness this year that of any previous.

A project has recently been inaugurated having for its object a supply of water by artesian wells for irrigating purposes in the Tia Juana valley.

SAN JOAQUIN.

Independent, Feb. 10: The successful growth of the orange in San Joaquin valley is no longer a matter of doubt and uncertainty. Whether or not oranges can be raised in our climate by out door culture, is a problem which has been satisfactorily solved by Mayor Holden of this city. He has demonstrated the fact that fine oranges can be matured in our climate without requiring greater attention, care or labor than is necessary for the successful cultivation of the apricot. We believe that citrons could also be successfully produced in San Joaquin Valley, or at least in many portions of it. There are numerous varieties of the orange, the principally varieties of the common sweet, are the Chinas, with round, smooth, rather flattened fruit, and a thin golden rind; the orange of Nice with large, thick-skinned, rough, dark yellow, round fruit—the best orange in the world. The blood orange, St. Michael's, Seville, Malta, Bergamot, and any number of common varieties, can all be successfully raised in the orchards and gardens in Stockton and vicinity. Aside from the profitable yield of the orange, it is worth planting for ornament alone.

We continue to have the most favorable reports from all parts of the San Joaquin Valley, concerning the prospect for an immense crop of grain at the coming harvest. The grain sowed upon summer fallowed land is now looking finely, and the quantity of land thus cultivated is larger than ever before, and two months from this time we will be able to show as large fields

of wheat as can be seen anywhere else on this continent. The arable portions of the valley over which the provisions of the trespass law was extended two years ago, will be almost wholly under cultivation. Should the next two months be as favorable as the last two, the product of grain for this year in San Joaquin valley may be safely estimated at twice the product of any previous year.

VENICE Island, containing about 4,000 acres and located on the San Joaquin river, 18 miles above Antioch, is to be entirely reclaimed this season.

SOLANO.

Vallejo Recorder, Feb. 8: Vallejo, by its fine natural situation, its commercial advantages, and rapidly increasing importance and prosperity, presents attractions and inducements to those who desire to establish manufactories, that are not equalled by any other city in the State. Hitherto there has been some objection raised on account of the absence of water privileges, but Lake Chabot has already enough water to furnish to the city and the factories that may be built a continued supply for years to come.

A writer from Solano county says the summer-fallowed wheat in many places will soon hide the ground. Not much of the winter-sowed grain is in yet, but everything indicates a large yield of grain this year, and the farmers are in the best of spirits.

SUTTER.

Appeal, Feb. 8: MANUFACTURES.—The manufactory of Best & Brown presents a lively appearance. They have thirty five separators under way, twelve of which are set up and nearly completed. They will build 100 this season, giving employment to several mechanics. They have added some improvements which materially enhance the value of these machines for general use. We learn that the demand for these machines is such that the manufacturers will be obliged to enlarge their shops, and consequently their working forces. This city should become a large manufacturing place. A wide scope of country should be supplied with all agricultural implements, farming utensils, foundry and machine work, and other branches of manufactures, from this city, and we hope ere long to see the time when this city shall furnish from her own manufactories all the leading articles consumed by those who now import them.

TUOLUMNE.

Democrat, Jan. 27: The weather this week has been bright and clear. Wednesday and Thursday nights were bitter cold with heavy frost and ice of unusual thickness for this climate.

ORANGES.—Thanks to Henry Hayes, of the Ohio House, near Montezuma, for some fine large oranges raised on his place. This fruit shows that oranges of good size and very excellent flavor can be raised in Tuolumne with little care and attention.

OREGON.

Oregonian, Feb. 3: A farmer on Howell's Prairie, Marion county, was offered one dollar and thirty cents a bushel last fall for his wheat. He refused, and wheat after a while began to decline. He is now hauling it through the mud and selling it at one dollar. He has 2,000 bushels.

There are still a few small lots of wheat in Linn county. At Albany, millers only offer one dollar per bushel.

Salem mills still offer \$1.05 per bushel for wheat.

Beef and potatoes are very scarce and high in Benton county.

The *Statesman* speaks thus of some of the improvements to be added to Salem during the present year: The court house will be commenced, which may necessitate the expenditure of about fifty thousand dollars. The Agricultural Manufacturing Works will be completed, and not only add a handsome edifice to our city but give us an additional lever to insure future prosperity. The new Academy of the Sacred Heart will be a structure 56x120 feet, three stories above the basement and built substantially of brick. Besides these we know that many handsome private residences are to be erected.

THE *Farmer* says: The Pioneer Oil Company, of this city, Salem, offer as special premiums on flax \$70 on the best ten acres, and \$55 on the second best, to be awarded by the State Agricultural Society at its next State Fair. The Society also offer \$30 and \$20 as first and second premiums, making in all \$100 for best ten acres, and \$75 for second best. The Pioneer Oil Co. are now contracting to pay \$1.85 per bushel for flax seed, to be delivered at the mill the coming season.

Agricultural Review.—Continued.

Land Monopolies.

But what is the position of the millions of acres of uncultivated lands throughout the State? Why are they uncultivated and unproductive? Is it true that these lands are monopolized by individuals, and held in large bodies, of but little profit to their owners, and at such immeasurable disadvantage to the State? What are the facts? By reference to some statistics collected by the State Board of Equalization for the illustration of another subject we find that in the County of Colusa there were assessed in 1871 to six different ownerships 116,647 acres of land; in the County of Tehama, to five different ownerships 48,710 acres; County of Butte, to five ownerships, 64,356 acres; in the County of Monterey, to eight ownerships, 122,343 acres; in the County of San Luis Obispo, to eleven ownerships, 251,266 acres; in the County of Santa Barbara, to thirteen ownerships, 410,973 acres; in the County of San Diego, to seven ownerships, 208,750 acres; in Kern County, to nine ownerships 305,542 acres; in Fresno County, to seven ownerships, 280,618 acres; in Merced County, to seventeen ownerships, 511,306 acres; and in San Joaquin County, to thirteen ownerships, 3,135,000 acres.

Thus in eleven counties of this State statistics collected by this Board, not with a view of showing the large ownerships of land, but for another object entirely, develop the astonishing fact that 100 proprietors own and control 5,465,286 acres of land, or an average of 54,652 acres each! This is 3,868,594 acres more land than the whole amount under cultivation in 1870, when the agricultural product of the State was valued at \$60,000,000. Divide these possessions of these one hundred proprietors into farms of 160 acres each, and they would make 34,157 farms. Let these farms be occupied each by a family of five persons, and there would be added to our rural population and producing classes 170,785 persons.

If each one of these farms was cultivated and made to produce at the same rate per acre that our land under cultivation in 1870 did produce, the additional value to our annual agricultural products would be \$131,164,944, or very nearly this sum, as they are now made to produce but very little to their owners. This last sum would also be about the measure of the permanent annual addition to the taxable property of the State.

Again: this land is now assessed, as stated by the Board of Equalization, at about an average of \$2 per acre. If divided into farms as supposed, it would at least add \$10 an acre to its annual assessed value, and thus would add \$54,642,060 to the permanent wealth and taxable property of the State. These lands have cost their owners on an average from \$1 to \$1.25 per acre, and are now, a very large portion of them at least, for sale in lots to suit purchasers at an advance figure, though at a very low or moderate price in comparison to their real value—say from \$2 to \$8 per acre, according to quality and location. What we have stated in regard to large ownerships of land in the counties named, is to a certain extent true of all the counties in the State. It is also true that the Central Pacific Railroad Company own some 3,000,000 acres of land in the State granted to them by the General Government. The lands of this company are also for sale in lots to suit purchasers, and at about the same rates per acre as those of the private parties to which we have referred.

These, then, are the facts, that very nearly all the lands in the State have, in one way or another, passed from the ownership of the Government to that of private parties, and that the prices of these lands are advanced considerably above the Government prices for public lands in this and in other States. These are the facts, and this is the length and breadth of the land monopoly in California. These are the present facts which we as a people, and with which the State of California have to deal. It is unnecessary now to complain of the legislation that opened the way to this state of things. It is a fruitless labor to inquire into the management of our State and National Land Offices, which has encouraged the accumulation of these lands in a few hands and in large bodies, rather than in the hands of small farmers, except to prevent the continuance of such management. We have to deal with this question as it now exists, and the best way is to look at it in a practical common sense manner. It interests the people and the State now mostly and almost wholly as it relates to and has an immediate bearing

upon another question of great importance—the question of immigration.

Immigration—Land for Emigrants.

There seems to be a universal opinion in California that the increase of population by the introduction of an industrious, working, thriving people, would add greatly to the general prosperity of the State. This opinion we believe to be well founded, and that it is to the general interests of all as well as the duty of all to encourage the immigration to our State of such people.

Does the fact that the millions of uncultivated but rich and fertile lands of the State belong to individuals instead of the General and State Governments, change this general interest and this general duty of our people? Both the General Government and the State have sold their respective portions of these lands, and have received the full price demanded for them, so that we as a people have no longer any direct interests in these lands or in their ownership. But we have an interest, and a vital one, in their cultivation and improvement, and in the additional wealth and prosperity such cultivation and improvement will bring to the State.

Will the fact that the sale of these lands at advanced rates over the Government prices bring riches and wealth to some of our enterprising citizens injure any of us as individuals, or detract from the great benefits that will thus accrue to us as a people or State? On the contrary, will not the wealth of these citizens add so much to the general wealth and taxable property of the State? Will it not be equivalent, indeed, to just so much additional capital put in circulation among us, to develop our latent resources and add to our general prosperity? Who, then, will be wronged by the encouragement of such immigration, even at the expense of some of the public revenue? Will not all the lands within the State the title of which is in individuals be compelled to bear their portion of such expense? Most certainly so.

If, however, these titles were still in the General Government and State, they would be exempt from taxation for the purposes of encouraging immigration, as well as for all other purposes. Then, so far as our people or State is concerned, is it not rather a benefit and advantage than an injury that these lands are private property, and consequently liable to bear a portion of the expenses of the State Government, as well as any outlay for the encouragement of immigration to settle up and bring additional wealth and capital into the State?

If it be objected that these lands are not honestly or proportionally assessed and taxed, this is another and separate question, and one that may be remedied. Let the State remedy the objection, and see to it that they are properly and proportionally assessed and compelled to pay taxes on every dollar of their "full cash value," the same as other property. Nor should their owners complain at this, or even at a proportionally high assessment and taxation, while a portion of the funds realized from such taxation is appropriated to encourage immigration, and thus bring to them a greater than an equal share of the benefits of such immigration by furnishing them customers for their lands and enhancing their value. It is true that these lands are held at higher rates than Government lands in other States, and that it will cost immigrants more to obtain lands here than where they can buy at the Government prices. But we would remind the intelligent immigrant that the lowest priced article, even in land, is not always the cheapest. The agricultural lands of California, as a general thing, are already for the plow. No clearing of heavy timber is required, no obstruction whatever to immediate cultivation is presented. And, as we have shown, California is one of the most favorable countries in the world for the poor farmer to get a start in. We have proved by official statistics that the average product of all the land under cultivation in eighteen hundred and seventy, a year of drouth, brought to the producers the handsome sum of twenty-three dollars and ten cents per acre.

Well may we ask, where can the industrious immigrant, rich or poor do better? Where can he do half as well? There is no difficulty here in obtaining any quantity of land on most favorable terms as to time. With the proceeds of the first crop produced and sold within a year from the time of purchase, many a man has paid for his farm and bought as much more land, or built a comfortable farm house and barn; and the opportunities for doing just as well by any enterprising farmer are almost without number in all portions of the State. It is true that a considerable portion of the land now for sale at very low rates, say two dollars per acre, are not con-

sidered of the best quality for the production of cereals, but are well adapted to vineyards, silk and fruit culture of all kinds, and when brought under cultivation in these specialties, never fail of a crop. In this connection we will state it as a historical fact, that since the first introduction of the vine into the State, at the first settlement of our old Missions, there never has been a failure in the grape crop, nor has the fruit crop ever failed in the State. These very lands, that can now be had at two dollars per acre, will return a greater profit to the skillful and economical manager than lands in France or Italy, or other European countries, or in any of the Atlantic States, held at from one hundred to three hundred dollars per acre, if devoted to wine, silk, raisin, or general fruit and nut culture.

It is also equally true that much of this land that can be had at from five to ten dollars per acre is equally as valuable for the production of the cereals as lands now under cultivation in these grains, and from which the owners realized this season from thirty dollars to forty dollars per acre. Again, there are already railroads projected and being built through almost every section of the State in which any of these lands are located, so that markets for every thing produced will soon be or are now within easy distance. General plans for irrigation are also being adopted and pushed forward to completion, thus placing the certainty of water within the control of every cultivator, and rendering a crop of any kind beyond the possibility of failure.

On the whole, we are well satisfied that no other State in the American Union presents greater inducements or more certain prosperity to the enterprising, skillful, and economical immigrant than does California. We are also well satisfied that whoever persists in publishing to the world the darkest side of our condition in California, is not only injuring the best interests of the people and the State, but is also doing a great injury to those who would otherwise come and make their homes among us and enjoy the unequalled advantages and prosperity that here awaits them.

The Fence Question.

There is perhaps no subject at present undergoing more earnest discussion in the agricultural communities of the State than the laws regulating the building of fences. If the general expression of the press be a true indication of the wishes of the people, we must conclude that there is a pretty general disposition to abandon the system of laws and customs that have heretofore prevailed in this country and State, and adopt the European system in regard to the protection of growing crops. While it is the province and desire of the Board of Agriculture to extend to all the industries of the State a fostering care and equal protection and encouragement, we cannot ignore the many considerations urged in favor of the change proposed. If it be found upon an unbiased examination of this subject that such a change will bring greater benefits to the greater interests, or the greater good to the greater number of our people, without inflicting severe wrong or hardship on other interests, then the sooner the change be made the better. It is a contest between two classes of property; in general terms—grain and cattle. It is claimed by the owners of the former that as grain or growing crops of all kinds are passive, and cattle are aggressive, that the natural rights of property and the equities regulating the management and relations of the same, as well as the moral obligations of the owners, would require that the latter should be restrained from committing depredations on the former, and that whatever expense is necessarily incurred in furnishing the means of such restraint such expense should be borne by the owners of the latter, and consequently that all laws founded upon a different principle should be repealed, and that laws recognizing this position should be enacted and enforced.

Relative Property Considerations.

As we have before stated in this report the returns of the County Assessors and the census reports fix the value of the agricultural products of the State for the year 1870, including grain, roots, and wine, and excluding fruits, at \$60,000,000. By the same returns, the whole number of grape vines and fruit trees of various kinds in the State is 30,910,046. Valuing these at one dollar each, and this is certainly below their real value, and discarding the odd thousands for convenience, we have an additional property of thirty million dollars—making ninety million dollars worth of growing crops and property re-

quiring protection from the ravages of the stock of the State.

Now, taking the whole number of horses, cattle, sheep, and goats in the State (leaving out the hogs, because the principle is already recognized and enforced by the present laws as regards them) and placing their value at their market prices, and we have the total of that value in round numbers—thirty million dollars—or just one third the total value of the other agricultural products or growing crops.

Here, then, we have among us thirty million dollars of aggressive property and ninety million dollars of passive, owned to a great extent by different parties. If the former are allowed to roam and seek their living without restraint the latter will necessarily, to a great extent, be destroyed; and the question arises upon which class of property or upon which set of owners shall the expense of such necessary restraint be placed? Not taking into account the amounts or values of the different classes, and only considering their nature, a disinterested umpire would naturally say the expense must be paid by the cattle or their owners.

Again, in all associations of property for the general gain—incorporated companies for instance—the greater number of shares or the majority in value controls and manages the whole interest, and that control and management is uniformly one of the conditions of the associations. Why should not the same rule of action obtain in this case and be enforced by the State in the management of the property of its citizens, as the State, so far as property relations is concerned, is but an extensive incorporation, founded for the purpose of enforcing the rights and equities of those relations.

Scarcity of Timber.

It is not improper, in this connection, to consider for a moment the scarcity of lumber in this State. Indeed, this scarcity and the cost of lumber for the building of fences may be instanced as one of the strongest arguments in favor of a change of law and custom on this subject. It is now but about twenty-two years since the consumption of timber and lumber commenced in California, and according to a careful estimate of those best acquainted with the subject at least one-third of all accessible timber of value then growing in the State is already consumed or destroyed.

We have but just commenced the great work of internal improvements, such as the building of railroads, bridges, warehouses, wharves, factories, bulkheads, timbering mines, etc., and in the twenty-two years to come we shall require for such purposes ten times as much timber as we have used in that period of the past. If the scarcity and cost of fencing material is already among the greatest drawbacks, or discouraging circumstances to the agricultural advancement of our State, without a change in this respect we may well feel a degree of solicitude for our agricultural interests ten years hence. To dispense with the necessity of the use of lumber is equivalent to its production. We hope, therefore, the subject of the fence laws will receive the impassionate and careful consideration at the hands of the Legislature that its importance at this time demands.

(To be continued.)

THE RESOURCES OF CALIFORNIA.—The first number of the second volume of this valuable publication has been laid upon our table, and is replete with carefully compiled facts relating to the various industries and resources of the State. It furnishes a large amount of matter of especial value for parties in other countries desiring to change their residence to this State. As an emigrant aid document, it possesses especial value, and all who receive it will do well, after carefully reading it themselves, to send it to some friend in the Eastern or Western States, or to England. The paper is published by Jno. H. P. Wentworth & Co., at 302 Montgomery street, in this city.

OUR CHIEF CITIES.—The cities which have ascended the scale in population, proportionately over their neighbors, within ten years, are St. Louis, Chicago, San Francisco, Washington, Cleveland and Jersey City. Those which have fallen below their classification of ten years ago, are, Baltimore, Boston, Cincinnati, New Orleans, Buffalo, Newark, Louisville, Detroit and Milwaukee. New York, Philadelphia, Brooklyn and Pittsburgh maintain the same relative rank they did in 1860.

USEFUL INFORMATION.

GUTTA PERCHA SOLES.—The method of putting gutta percha soles on leather is similar to this. First take all the nails out and rasp the sole all over as coarse as possible, then give it a coating of solution, made of gutta percha and naphtha, and let it dry. Then get your gutta percha, which has been boiled in water until quite soft, and work it with your hands until the water is out of it. Now get a lump that you believe will be enough to make the sole, and work it into a ball. Heat your boot a little, and lay the ball on the centre of the sole, and with the palm of your hand spread it over, taking care to cover the whole. Give it a slight rap on an iron plate. In about half an hour cut it round with a hot piece of iron smoothly, and sand-paper it. The heels should have a little scooped out of the centre, which makes a good foundation for the lump to rest in.

ARTIFICIAL MILK USED IN PARIS DURING THE SIEGE.—When natural milk became scarce in Paris, an artificial milk was made by dissolving 1½ ounces of sugar in a quart of water, adding an ounce of dry albumin (from white of egg) and 15 to 30 grains of soda crystals, and then emulsifying therein from 1½ to 2 ounces of olive oil. As the war progressed, gelatin was substituted for the albumin, and then slaughter-house fats—purified by melting at 150° and then projecting in them small quantities of water—for the olive oil. One firm made in this latter way, 132,000 gallons of milk daily for Paris consumption.

THE AUSTRALIAN MEATS now sold in Europe, and elsewhere, have not found their way to this country, but it will not be long before the plan will be adopted here with our own meats. It has many advantages which commend themselves. If a large business be done in the putting up of canned meats, and they are put upon the market the same as oysters and canned fruits, there will be found economy both in price and absence of waste. It will particularly be a trade which will meet the demands of new towns in remote localities, which at certain seasons are almost without a market.

ABIERTINE.—Abiertine or extract of Fir Balsam, is a recently discovered agent which is commanding considerable attention. It is manufactured about forty miles above Oroville, the proprietors having put up works there for the distillation of the balsam from which it is made. It is highly recommended for cleaning type, taking paint and other stains out of clothing. It is also recommended for sprains, burns, neuralgia, tooth-ache, etc. Should this California production possess the virtue claimed, the discoverer and manufacturer has made a profitable investment.

WHISKY.—It is stated that when Russian troops are about to start on a march in a very cold region, no grog is allowed. The men once drawn up, it becomes the corporal's duty to smell their breath and send back all who have been drinking. Many more examples might be cited, to prove that it is the universal experience of all who have fairly tested it, that alcohol diminishes our power to resist cold.

How is This?—An exchange (we find the paragraph among the "miscellany" of the *College Courier*) says: "Mr. S. S. Packard has for some years held open a standing offer to educate gratuitously fifty women in his business college. He states that the result has been two hundred applications, twenty trials, and two successes." What was his standard of "success?"

A NEW description of carpet known as India Brussels, has been introduced of the same width as ordinary tapestry Brussels, and said to possess an equally good appearance. It is made of a superior quality of wool, felted so as to make the fabric heavy and durable; and on the face are printed, in colors, designs of recent introduction.

THE BAT'S WING.—It has been found that the bat's wing and the ear of the white mouse are most abundantly provided with nerves, apparently for the purpose of supplying, by means of a very refined sense of touch, the imperfection of vision. The number of nerve endings on each ear of the white mouse are estimated at 6,000.

BEEET SUGAR IN FRANCE.—The production of beet sugar in France gives employment to upwards of 400 factories.

GOOD HEALTH.

BUTTER AND WORMS.—There is no doubt that the larvæ of the various worms which infest the alimentary canal of children, and frequently, too, of adults, are taken in with the food. Greasy substances are apt to abound with them. In a late German medical journal, a Dr. Hubber relates many experiments he has made on this subject, and he comes to the conclusion that no article used by man as food, especially during childhood, is so prolific a cause of intestinal worms as butter. The use of butter serves also for the introduction of insects, as well as worms; and, as American children seldom eat bread without a thick coating of butter, the general presence of intestinal worms need not be wondered at.—*Home and Hearth.*

RIGIDITY OF THE JAWS IN DROWNING PERSONS NOT A SIGN OF DEATH.—A recent writer assures us that the rigidity of the jaws in a person taken out of the water after long emersion, instead of being a sign of death, is really an indication that life is still present, as it disappears only when life is actually extinct. This, of course, is not to be confounded with the stiffening of the entire body after death, but refers entirely to the local symptoms. We are, therefore, advised, under the circumstances indicated, not to lose hope, but to continue to make use of all the methods that present themselves as appropriate for the restoration of suspended animation, whether by the injection of air into the lungs, or by other means.

THE LAMP IN A SICK ROOM.—The following simple arrangement will remedy the evil of foul gas, generated by burning a kerosene lamp all night in a nursery or sick room: Take a raisin or any other suitable sized box that will contain the lamp when set up on end. Place the lamp in the box, outside the window, with the open side facing the room. When there are blinds, the box can be attached to each by leaving them a little open, and fastening with a cord; or the lamp box can be nailed to the window casing in a permanent manner. The lamp burns quite as well outside, and a decided improvement of the air in the room is experienced.

DISTINGUISHING REAL FROM APPARENT DEATH.—A new mode of distinguishing between real and apparent death has been recently submitted to the consideration of the Academy of Medicine, in Paris. It consists in the insertion of a bright steel needle into the body; and it is said that when life is present the needle soon becomes tarnished by oxidation; while, on the other hand, if death has taken place, the needle will retain its brightness for half an hour or more. According to Dr. Laborde, the author of the communication, oxidation, with its attendant electrical phenomena, indicates that death is only apparent, and the entire absence of oxidation is a sign of real death.

QUININE BISCUITS.—A new dietary article has been introduced by the London bakers, in the shape of quinine biscuits. They are small, extremely well made, and have a pleasant and delicately bitter flavor. Each biscuit is estimated to contain one-fourth of a grain of quinine, and for delicate stomachs, or where it is desirable to disguise medicines as much as possible, or to combine food with medicine in a perfectly agreeable form, these biscuits are likely to become very popular.

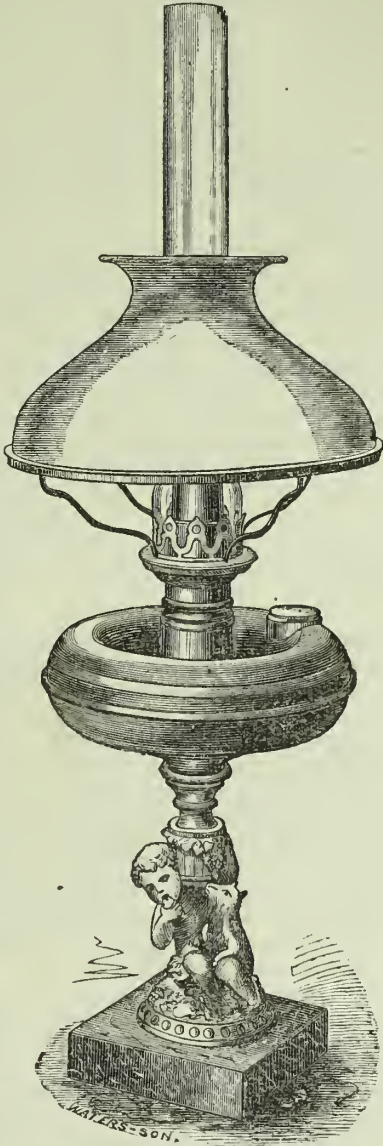
LIME.—We find the following in an exchange: A standing antidote for poison by oak, ivy, etc., is to take a handful of quick lime, dissolve in water, let it stand half an hour, then paint the poisoned parts with it. Three or four applications will never fail to cure the most aggravated cases. Poison from bees, hornets, spider bites, etc., is instantly arrested by the application of equal parts of common salt and bicarbonate of soda, well rubbed in on the place bitten or stung.

TOOTHACHE.—A correspondent of the *English Magazine*, gives the following curious remedy: Put a piece of quick-lime as big as a walnut in a pint of water in a bottle. Clean the teeth with a little of it every morning, rinsing the mouth with clean water afterwards. If the teeth are good, it will preserve them and keep away toothache; if the teeth are gone, it will harden the gums so that they will masticate crusts and all.

SORE MOUTH AND TONGUE.—Three drachms of borax, two of sugar of lead, half an ounce of alum, and a pint of sage tea, will cure a sore mouth and tongue. It must be used as a wash.

Patent Safety Lamp.

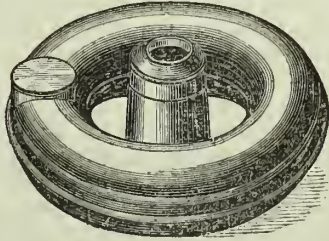
The accompanying illustrations represent the Bright-Union Safety Lamp, one which possesses considerable merit, since it is the only one that has the burner connected with the tube separate and distinct from the reservoir containing the oil, and in case it should be upset, the oil will flow from the burner and not come in contact with the flame. Most of the lamps in use have the burner screwed direct on to the fount, or oil tube containing the oil, there being nothing in that case to pre-



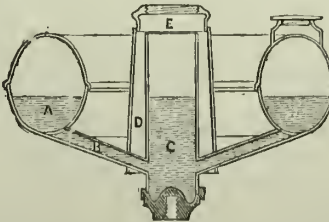
PATENT SAFETY LAMP.

vent the accumulation of gas, and from that cause we hear of numberless accidents from explosions.

This lamp is constructed with two tubes, as will be seen in the cut, the outside one,



D, intended only for the attachment of the burner, and the inside one, C, to contain oil and receive Wick. As there is no connection between these tubes, it will be



evident that there can be no possibility of communicating any heat to the oil, and as long as the oil in a lamp can be kept perfectly cool there is no chance for an explosion. The tube to which the burner is attached, D, is free from the oil tube, C, and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool. The oil receptacle represented by A admits the oil through an opening in the top whenever it passes down through the

tube B into the tube C. E represents the burner.

When the burner is attached to the lamp, it will be seen that there is no opportunity for the oil to escape, should it be overturned, and in case any accident should result, the worst consequences that would occur would be the breaking of a chimney or shade. The patent for this invention was obtained through the SCIENTIFIC PRESS Patent Agency, by M. Samuels, and the lamps may be seen at Center & Bryant's, No. 10 Third street, in this city.

Having given this lamp the test of practical use we do not hesitate to give it our editorial recommendation. It is a California invention which seems to us likely to become useful and notable abroad as well as at home.

Daily Weather Record.*

By the U. S. ARMY SIGNAL SERVICE, FOR THE WEEK ENDING WEDNESDAY, FEBRUARY 7, 1872.

	Date and Place of Observation.	Height of Barometer.	Thermometer. Rel. Humidity.	Direction of Wind.	Vel. of Wind. Miles per Hour.	Force of Wind. Force of Wind. red to Beaufort's Scale, Approx- imately	Amount of Rain, or Snow, or Fog, or Ice, or Hail, or Sleet, or Mist, or Fog, or Hail, or Sleet, or
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*This report is continued on page 108 of this issue.

Book Notice.

THE ANNUAL ILLUSTRATED CATALOGUE AND OARSMAN'S MANUAL FOR 1871.

This is a large quarto volume, 500 pages, printed in colors or tinted paper, containing 65 illustrations on wood, and 12 plates on stone, bound in gilt muslin, beveled edges.

We have received from the publishers, Messrs. Waters, Balch & Co., 303 River street, Troy, N. Y., a copy of this work. It is especially addressed to the lovers of rowing in racing shells, though a considerable portion of the work is devoted to the interests of those who, less daring or less energetic, find enjoyment in paddling a canoe, or pulling a skiff that one can stand up in.

It gives a very good history of the changes and improvements which have taken place in the construction of racing boats, since racing in boats first came in fashion, and this naturally leads to the discussion of the merits of the last change, i. e. the substitution of paper for wood in the outer sheathing of these boats. The defects, which the book claims, are inherent in wooden sheathed boats, are acknowledged by many prominent oarsmen, and testimonials in support of the claims of the paper boat are not wanting. Besides being illustrated with many fine woodcuts which exhibit the various styles of boats in use in the United States for hunting and fishing, a very full list of the different rowing and hunting clubs in the United States and British Provinces is given. In a word, the amateur or professional oarsman will find in this volume everything he wishes to know, whether on the subject of training, care of his boat, boat building or the past history of boat racing. All this and much more he will find in the clearest of type, in the finest of tinted paper, and elegantly bound.



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DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.
PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

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SAN FRANCISCO:

Saturday, Feb. 17, 1872.

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California Raisins.

We have received a regular raisin box full of really excellent raisins from H. W. Crabb, Esq., of Oakville, Napa county. It would not be treating the subject of California raisin growing fairly, to say that they nearly equal the best imported, because they are fully up to the standard of the best, if we except the simple matter of size. No one to see them would suppose them to be any other, than a genuine importation. Of the two varieties, we are rather inclined to give the preference to the White Muscat of Alexandria. They seem to be a little more meaty than the White Malaga; except this, it would be difficult to say which are the best.

The method by which Mr. C. has obtained results so favorable, seems so very simple, that we give his letter in full for the benefit of any who may wish to avail themselves of his mode of drying. We regret that we do not understand whether the turning was once a day or only once during the three weeks, and also whether they were covered or taken in at night.

EDITORS PRESS:—After noticing accounts of raisins sent you from other counties, I thought it appropriate that some one should represent Napa; as she is not excelled in the quality of her wines, may her raisins compare as favorably. Therefore, I send you a sample of some made from the White Muscat of Alexandria and White Malaga by simply cutting from the vine and laying on a scaffold in the sun, turning once, and taking about three weeks to cure. Would like to have your opinion which is the best of the two. I have tried a number of varieties, but find these superior to any of them. The Feher Zagos, with me, is not worth cultivating for any purpose; neither have I succeeded in making a nice raisin from any colored grape.
H. W. C.

Oakville, Napa Co., Feb. 8, 1872.

"H. H. H."—Among the number of hieroglyphics posted on the fences around the country is one with the above letters. By reference to our advertising columns the meaning of the combination of letters, will be seen.

The Vegetable Garden.

Every resident farmer who occupies five acres or more of land, should set apart at least one-fourth of an acre for a vegetable garden, and if the soil be suitable it should be located near the dwelling house, and enclosed with a good substantial fence. No part of the farm of the same extent will pay so well, or directly conduce to the comfort and health of the family and farm hands as the variety and quality of the products of a well-kept kitchen garden. For a farmer to be obliged to procure his potatoes from some neighboring city or village, and perhaps these are the only vegetable seen upon his table for months, when it might be supplied with an abundance and of every variety from his own garden, and that from the few minutes labor of the farm hands while waiting breakfast in the morning, is simply a burlesque on the name of farmer, and should put to shame those who so needlessly neglect to provide themselves with comforts and even luxuries so easily obtained.

Now is the time to prepare the ground for just the garden to produce you the good things coveted. First plow the ground carefully to a depth of at least eight inches; then apply, if it be possible to procure it, at least ten tons of well-rotted manure, and spread it evenly over the surface with fork or shovel, then harrow, mixing the manure with the soil to a depth of three or four inches; and this is why long, straw manure will not answer well, it will not mix, but lie upon the surfaces of the soil just where you don't want it. Let the land lie in this condition till you want it; but for some of your garden crops you want a portion of it now.

If you have an abundance of help and can afford to spade the ground for your crops all the better; but if not, commence on one side of the field and plow with a small or narrow-cutting plow a width not to exceed five feet, turning the furrows all one way and outward; a side-hill plow is worth owning for this especial purpose; but if you have not such a plow then go your rounds plowing but one way. Now rake the surface with a hand, hay or garden rake, and plant lettuce, cabbage, turnips, beets, and peas, occupying its full width with one kind of vegetable as far as you go; the rows the proper distance apart, to admit of a hoe passing between them and crosswise of the bed.

In from six to ten days, if the weather continues warm, your seed will be up, and ready for a first hoeing and weeding, which should be done without delay. If a larger quantity of products are desired than can be grown on a five-foot bed, make two of them, leave a path of 18 inches in width between them, in which to stand while hoeing. The first bed or beds being now weeded, turn over additional soil to the width desired in the same manner as before and plant again, varying the kind of seed to suit the requirements of the family, and the season. Lettuce, peas, and radishes every ten days will give you a succession of good things fresh and more succulent than if allowed a longer interval between sowings.

On this one-fourth of an acre can also be raised, every potato that a family of ten persons will require during the early summer or till the field crop is ready for market or use, and all the beans, cucumbers, squashes and melons; but these should not be planted too early, in places liable to late spring frosts. While waiting four or five weeks for the season to advance, the prepared ground should be harrowed over as often as a crop of weeds appear, and these are sure to come as quickly as any seed you can plant; but with every harrowing is a consequent destruction of surface seed or weeds, and hence there are less to exterminate with the hoe.

Continue thus every ten or twelve days to turn over, rake down, and plant a new bed till all is under culture or the season so far advanced as not to require it further; then keep the whole well tilled and free from weeds, and you will be astonished yourself with the quantity of vegetables, good, healthy family food that you obtain from that little one-fourth of an acre of your farms. If you say your soil is too dry for a garden, then put up a wind-wheel and if not able to do this, take less land, an eighth of an acre, and water it from your well, with a pint cup, if you cannot do better, for it will pay.

FARMERS, everywhere, write for your paper! It will improve yourselves, benefit your neighbors and oblige posterity.

Will Angola Goats Pay?

In the *Alla* of Monday last we find the following:

"A statement has been published that several hundred pounds of Cashmere goat wool, from California, have been sold in Philadelphia at various prices, ranging from 40 cents to \$1.20 per pound, according to quality. In 1866, according to the Surveyor-General's report for that year, there were 2,750 Cashmere goats in the State, from which stock, if they had increased with the same rapidity as sheep when well cared for—though it is claimed that these goats will increase more rapidly—we should now have 11,036 she-goats, of which a large majority would be more than seven-eighths fine—that is if none of the goats of 1867 had less than half-blood and the bucks were all of pure blood. As a fleece is supposed to contain not less than five pounds, a shipment of "several hundred pounds" suggests the idea that the production of Cashmere wool is not very profitable as yet."

Now let us take a correct view of this subject and see if there is anything very strange or mysterious as regards the quantity of wool actually disposed of, since the first introduction of the Angola goat. Of the 2,750 goats in the State in 1866, only 140 were full-blood, the rest were of all grades, from the straight-hair in the common goat to half, three-fourths, and seven-eighths blood, and a large proportion of all not producing a wool or hair fit for sale, and yet they were all classed as Angola goats. Of the original importation of full-bloods, the greater part still remains in first hands; but of those sold, only a very few can be found together, most persons preferring to try the experiment on a small scale; therefore, as they are widely distributed throughout the State, it is not to be supposed that any one grower is in possession of a very large quantity of full-blood or even high-grade fleece, and having but little has made no endeavor to find a market for what he has. Consequently we hear of but one person, Mr. Butterfield, who has made any effort to find an eastern market for his clip, sending on a few hundred pounds only, as samples of his different grades; whilst we know of several growers who have on hand a thousand pounds or more each, and a few with much more than this.

Orange Trees from Seed.

"A Subscriber," writing from Princeton, Colusa County, remarks thus:

EDITORS PRESS:—I have a number of orange trees started from the seed last summer. I have them in a hot-house, but they are not growing as fast as I think they should. Will you please furnish me the required information; as to the kind of soil, whether they should be manured while young, etc., as this is a branch of business in which no one in this section, to my knowledge, has had any experience.

If the trees made a fair season's growth last summer, it should not be expected of them that they continue an equally rapid growth through the winter, even though kept in a hot-house. The orange, though supposed to be always growing, because evergreen, has its season of rest, like all other trees, and particularly is this the case while the trees are quite young. On the opening of spring, the trees will without doubt, show indications of returning vigor, whether any change is made in the condition of the soil or not. If the young trees were strongly manured, it may work no particular harm; but it would have been better to have grown them the first year in an old well-mixed soil of an ordinary degree of fertility, in which sand is made a considerable ingredient. Our experience has been that all tree seeds and cuttings will vegetate or "strike" quicker and better in a soil containing a large proportion of sand.

I would not rear the young trees in a soil any richer than that in which they are to finally grow. If they made a fair growth last summer, they are large enough to be "whip-grafted" this spring with scions from such bearing trees as are known to be fruitful, and of the right variety, sweet or sour. If they are not grafted this spring, it would be better to head them back within a few inches of the ground. The effect will be to cause the growth of a strong healthy shoot, in place of the thorny, half-stunted growth that many of them perhaps now present, and this new shoot will be in splendid condition for budding from bearing trees at the proper season.

LA BELLE WAGON.—David D. Miller, 715 Market street, one of the oldest established dealers in carriages and wagons on this coast, is general agent for this celebrated wagon of which so much has been said.

Boise Valley, Idaho.

Boise Valley opens out from a cañon about five miles east of Boise City, extending fifty miles in a westerly direction, terminating at Snake river where old Fort Boise used to stand. Old Fort Boise was erected and used by the American Fur Company. About half of the valley lands suited to agricultural purposes is under cultivation—the seasons vary greatly. Early springs and cold springs and late summers come and go with great irregularity, and full of serious consequences to the farmers. The vegetables raised in Boise Valley are of excellent quality, particularly onions, cabbages, potatoes and beets. By careful irrigation the soil produces remarkably. The grain consisting of wheat, barley and oats is very fine. Lying along the Boise river within ten or fifteen miles of Boise City, there are some fine farms under well advanced cultivation and yielding increased profits every year.

Fuel and timber is mostly supplied from the mountains; large willows and the balm tree grow profusely along the river giving the valley a pretty appearance during the summer season. Boise river is a winding stream of clear water, with sandy bottom and fordable in most places. Fine fish, especially salmon, are taken out of the stream in considerable quantities and find a ready sale.

According to a writer in the *Overland* for February, the salmon run up Boise river in October; but they must have arranged a new schedule of arrivals and departures since the writer of this article lived in Idaho, for they were accustomed to arrive in Boise river in July. We are not disposed to credit the idea of any change in their programme. Boise Valley vegetables sell in all the markets of interior Idaho. The potatoes are of excellent flavor and large size and have the choice of the home markets.

KENTUCKY BLUE GRASS.—In answer to "Enquirer," we would say that we are not aware of any experiments having been made in California in the cultivation of Kentucky Blue Grass. Our impression is that it will not succeed at all in so dry a climate as California, even when aided by irrigation. The rootlets, especially when the grass is young, run very near the surface, and are soon dried out. Even in Kentucky and other Western States where it has been introduced, it is not depended on much for a summer grass. It has a spring and fall growth only. During the summer its growth is very small; but in those parts of the country where the winters are open it keeps green all winter.

Blue grass flourishes best on light, rich land, having a good clay substratum. It requires much lime. The soil of Central Kentucky, its peculiar home, contains an abundance of phosphate and carbonate of lime, and this is the reason why she excels all other regions in the production of blue grass. The presence of oak timber is not favorable to it; the large amount of tannin in the leaves of that tree, will not admit of their ready decay, and also tend to retard the decay of other vegetable matter which the grass needs for its sustenance.

"A SUBSCRIBER" from Virginia City writes as follows:—"Knowing that you answer all enquiries made through your paper, you will please answer as soon as convenient.—What is the best and cheapest way to make Candles, Soap and Curled Hair." In reply, we would say that the questions we propose to answer through the columns of the Press are, as a general thing, only such as are not readily answered by reference to encyclopedias and other books within ordinary reach. The answer to the first and second query will be found in Appleton's Encyclopedia, or more fully in Muspratt's Chemistry. "Curled hair," such as is used in upholstery is simply hair that has been twisted into rope, suffered to remain in that condition awhile and then cut and picked to pieces, when it assumes the peculiar appearance known as curled hair.

THE ENGLISH COTTON GIN EXPERIMENT.—A correspondent writes us a flattering notice of the *RURAL*, and asks to be put in communication with the parties interested in the competitive cotton gin experiments alluded to on page 88 of our last issue. In reply, we would say that the notice referred to was taken from a recent English paper, now mislaid, but which promised further details in a subsequent issue, which issue, we presume, will come to hand as soon as the "snow blockade" is raised, when we shall probably be able to give him the information he desires.

Niagara Falls.—Its Physical Changes.

The view of Niagara which we herewith present is a most accurate and excellent one, and represents the Falls as they appear on a pleasant winter's day. The description of the general appearance of these falls and their surroundings is so familiar to every American reader that it is not necessary we should repeat it here; but the geology of the region, and the changes which are being wrought in the locality by the action of this immense fall of water is a matter not so generally known, and is well worth attention for a moment.

This great sheet of water is precipitated over a ledge of hard limestone lying in horizontal strata, below which, but considerably above the bottom of the fall, is a strata of soft shale, which wears away, under the action of the water, much faster than the overlying limestone. As a consequence of this peculiarity, a projecting roof of limestone is always overhanging the water below. This overhang, at the present time, in some places projects 40 feet or more over the boiling waters, and thus there must be a point where the overhanging mass will break off and cause the falls, at that point to recede a distance equal to the extent of the break.

It is estimated that this continual destruction of the underlying rocks and the occasional breaks of the overhanging mass, is causing the falls to recede at an average rate of from two to three feet a year. There is no doubt that within the present geological period they have moved up stream, from Queenstown, seven miles to their present position—Queenstown being the point where the river merges into the plain, and below which there could have been no falls. This retrocession is still going on. A large projection on the Canadian bank, known as Table Rock, partly fell off in 1863, and there is good reason to expect other similar breaks and slides at a very early day.

There is another very significant consideration inseparable from the fact of this retrocession: The falls are about 160 feet high, while Lake Erie is but 70 feet deep, the river having a fall of some 30 or 40 feet from the outlet of the lake to the top of the falls; hence if the falls continue to recede, as they must, the time will come when Lake Erie will be completely drained, nothing being left of it but a river, following its central and deepest channel from Detroit to Buffalo. It may be some consolation, however, to the present holders of wharf property on that lake to know that the distance from the Falls to the Lake is about 20 miles; hence if the retrocession is no more rapid than now estimated, it will be about 40,000 years before the catastrophe will be realized.

To Californians, who, perhaps, more than almost any other people, have learned to realize the mighty influence of water in moving and wearing away rocks and other heavy masses, the results above hinted at will not appear at all strange, when the fact is kept in mind that the mass of water pouring over Niagara, even in average seasons, is not less than one

million of tons per minute! When we reflect upon the terribly destructive force produced by the constant fall of such a mass from the height of 160 feet, added to the abrasive effect of the whirlpools in undermining the soft underlying strata below, the wonder is that the action is not much more perceptible and rapid than above estimated.

SKUNK-CABBAGE—*Symplocarpus*.—This obnoxious plant is found in great abundance in Humboldt county, in the town of Eureka. It infests the lowlands, growing in vigorous profusion. Even before the frost is entirely out of the ground it ventures its large rich leaves up through the standing water of the marshy localities, and proceeds to enormous growth. The root is considered, when grated, a cure for bronchial affections. In the Western States it

Transplanting Early Tomatoes.

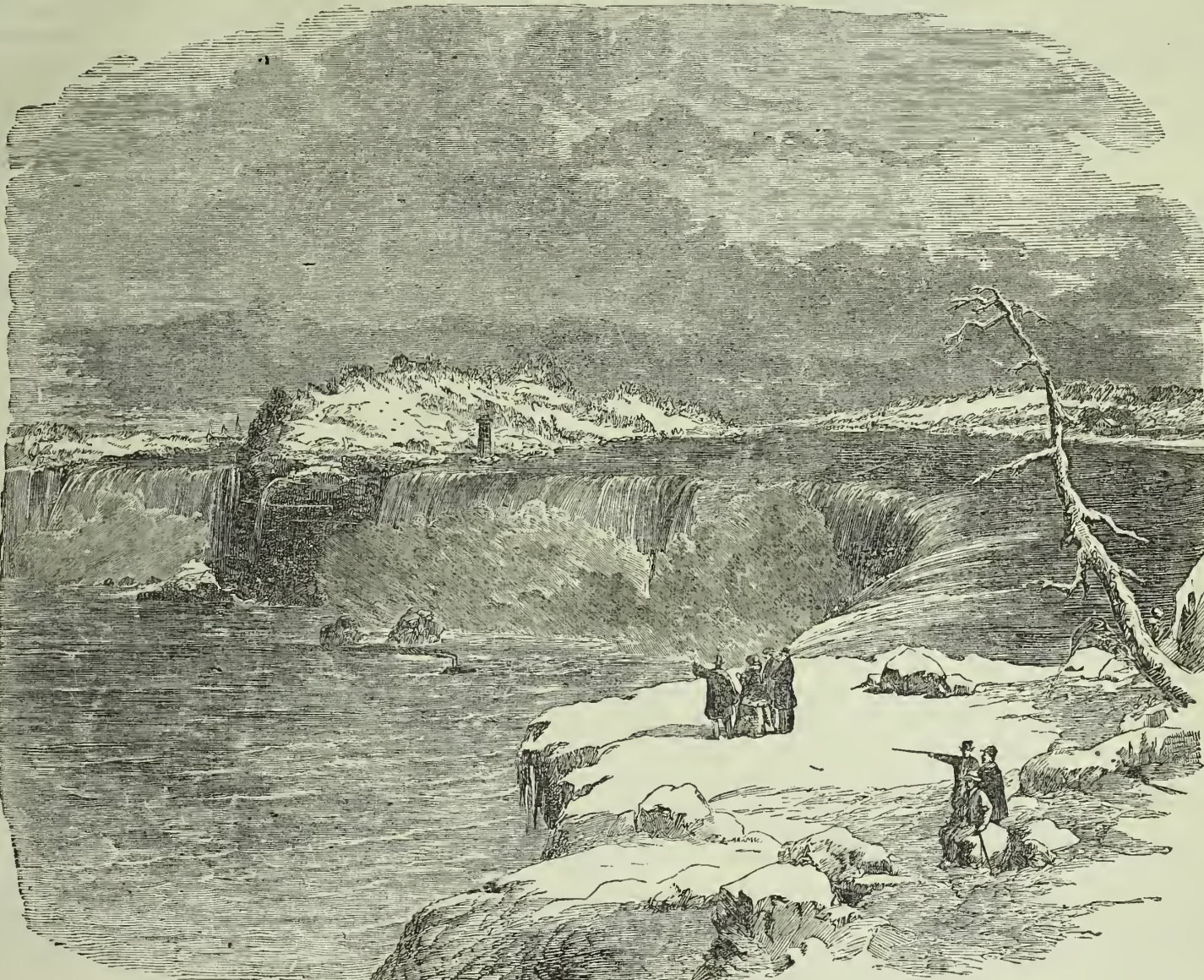
Anybody can raise tomatoes, but anybody cannot get them as early in the season as they would wish, because the young plants are exceedingly sensitive to the action of frost or even very cold nights without frost. This has caused all manner of experiments to be tried with a view of giving the plants an earlier start than they can possibly get in entirely open air culture. Starting the plants in the hot-house or in the garden hot-bed, is the favorite plan, and so far as the starting is concerned, does well; but there is always a set-back given to such plants when transplanted or removed to open air, caused by the falling of the earth from the roots, and the consequent matting together of the same when covered in their new position. To remedy this and secure a perfect removal of

Why Ornamental Trees Are Blown Over.

Large numbers of our beautiful evergreen trees are every year blown down or nearly so, by the prevailing strong winds in many localities throughout the State. To say the least, it is extremely annoying to find after the pains we have taken to grow a beautiful tree, by careful cultivation and judicious pruning, to get up on a fine morning and find it prostrated by the previous night's wind. Not that it must be wholly lost, because almost any such tree can be righted up and saved, as the roots are seldom drawn out or much broken except upon one side; these can be replaced in position, by throwing out the earth to the proper depth, the tree raised to its place and the roots again covered. Now except the time and expense required for the process, there is no great annoyance further, only that, ever after or for years at least, such trees must be sustained in position by lines or ropes from near their tops, down to some firm support in or near the ground; these are always unsightly.

There are two reasons why so many trees are blown over. One is because the tree is too large when removed from the nursery, almost necessarily involving the destruction of the tap root, and which in all trees is the best security they can have against the force of the winds. A strong tap root is as though an iron bolt connected the body of the tree to the solid earth below, and no such tree can well blow over, because this root cannot be drawn out; it may break, but that only shows the great strain upon it, and therefore its usefulness.

Another reason for the frequent blowing over of



NIAGARA FALLS—WINTER VIEW.

is found usually on low, swampy land, and is gathered to considerable extent for medicinal purposes, and particularly for severe colds, bronchitis and throat diseases. It is prepared by simply drying the root, grating it fine and mixing it with water or any other liquid. It has a peppery taste and an offensive odor. The leaves, stalk and flower of the plant, when green, are very offensive, and if handled with the fingers it is hard to eradicate the scent even by repeated use of soap and water.

An old lady living in Eureka, Humboldt Co., gathers the root in considerable quantities, and from it manufactures a soft salve, that is used to heal ring-worms, white swellings, and in some cases has been applied with good results to parts affected by inflammatory rheumatism. There is no other portion of California where this offensive weed is found in such large quantities as Humboldt county in the vicinity of Humboldt Bay.

UNIVERSAL CROP REPORTS.—The article on this subject referred to by Mr. Roach in his letter, in another column, was one which was written at the time that the letter of Lieut. Maury, on the subject of "grain reports," was going the rounds of the press here and in the East some four or five months ago. Mr. Roach, however, made the first suggestions on the subject in the *Examiner* long before Lieut. Maury's letter was published. Moreover, he gives a broader scope to the utility of the proposed system than Maury, from the fact of suggesting that it be made a subject of international treaty. The system is an important one and the honor of being the first to suggest its adoption should remain where it is due.

the plants, it is recommended, though we never tried it, to start the seed in earth placed in potatoes or turnips scooped out to receive it, using only two or three seeds to a cavity and removing all together when the open air is sufficiently warm, leaving the scooped vegetable to decay in due time. This, it is claimed, will secure an uninterrupted growth, the plant receiving no check on removal. We have found an excellent method in the following: Get a lot of old tin, or new will answer of course, cut it in strips two inches wide and roll it up in the form of a cylinder of two inches in diameter, bend the edges of the ends, forming a lap, hitch the ends and hammer them down—which can be done faster than we can tell how to do it; then take a flat chip or thin piece of shingle, or any other thing for a bottom, fill up with earth, and start the plants in these false-bottomed cups. When large enough, remove to the open-air border, set them in place and gently remove the bottom by sliding it to one side, and the plant will receive no set-back from removal. It is also an excellent plan to start early melons, cucumbers, orange seeds, etc.

COAL NEAR PETALUMA.—The Petaluma *Crescent* of the 11th states that a ledge of excellent coal has been discovered near the Guallala river. It seems that the soil on a mountain side had been so moistened by the late heavy rains, that a land slide occurred and laid bare a bed of coal, which appears to be of immense extent.

such trees is found in the mode of trimming or "clipping in" as it is called; which consists in, annually cutting back the ends of all the limbs from the surface of the ground to the apex of the tree's foliage. The effect is a thickening of the foliage to that degree that the wind in stead of passing through it, is arrested almost as effectually as if it were a canvas surface, which necessarily adds greatly to the power of the leverage upon the roots of the tree.

The remedy lies in transplanting the trees when very small, that any root that may tend to form a strong descending one, be allowed to do so. It is very seldom we see an evergreen of the Conifer family, overturned by the roots, in their native localities, though exposed to more furious winds, than the half-grown specimens of our parks and garden grounds. Every known species of conifer and nearly all trees grown from seed without transplanting, have Nature's guide governing their growth, and Nature endows them with this anchor root for some good purpose.

IRRIGATION.—A communication on the history of, and the great importance of irrigation to California, by Mayor Holden, of Stockton, will appear soon.

CLEARING LANDS.—We have received a communication from J. S. W., of Lakeport, on the subject of clearing lands of timber, which we shall give place to, and answer, next week.



Tell it Again.

A little golden head close to my knee,
Sweet eyes of tender gentianella blue
Fixed upon mine, a little coaxing voice,
Only we two—

"Tell it again"—insatiate demand!
And like a toiling spider where I sat
I wove and spun the many-colored webs
Of this and that—

Of Dotty Pringle sweeping out her hall—
Of Greedy Bear—of Santa Claus the good,
And how the little children met the months
Within the wood.

"Tell it again"—and though the sand-man
came
Dropping his drowsy grains in each blue eye,
"Tell it again, oh just once more"—was still
The sleepy cry.

My Spring-time violet early snatched away
To fairer gardens, all unknown to me—
Gardens of whose invisible, guarded gates
I have no key—

I weave my fancies now for other ears,
Thy sister blossoms, who beside me sits,
Rosy, imperative, and quick to mark
My lagging wits—

But still the stories bear thy name, are thine,
Part of the sunshine of thy brief, sweet day,
Though in her little warm and living hands
The book I lay.

A Voice From the Country.

[Written for the Press.]

I am certain that we don't know how you
"poor people" of the city (I mean San
Francisco, not San José or any of those
small but growing cities) manage to enjoy
yourselves during these horribly dismal
winter months; to be sure you have your
numerous balls, parties, and entertain-
ments, not to mention your skating rinks;
but then, my poor delicate, daintily dressed
adies, and fashionably gotten up and
moustached gents, ain't you afraid (I only
ask for information) you'll soil the tips of
your dainty tight-fitting boots? Or may-
hap catch your death, in the shape of
rheumatism, pneumonia or consumption,
by going out in the chill, damp air? Why
I don't dream that there is a girl among
you, who would think of wearing heavy
calf-skin boots, warm, comfortable fitting
water proof suits, and a large sensible hat,
to go for a promenade on a rainy day. No,
no, society does not demand that, you
answer; but meanwhile, do you think a
walk in the cool, invigorating air, would
seriously harm your health? If you do, I
do not.

I was born in the city and raised in the
city, till ten years of age; I am now living
on a farm near the little town of Los
Gatos; I walk sometimes as far as seven
miles in a day; it doesn't hurt me. I ride
eight and ten miles on horseback when I
have time, and there is nothing that pleases
me better than a brisk canter on an easy-
going horse.

My! But it is splendid! all our roads
are mountainous, and they are as crooked
as one of our streams, which bend and
twist, and curl in and out, every turn pre-
senting new scenery.

Just now everything is green, with the
tender, budding grass, and soon our trees
will put forth their buds and appear
radiant in a robe of emerald. You know
not all the beauties of nature, my city
friend, and you cannot imagine how much
good a visit to the country would do you;
why a month's sojourn here would set the
blood running briskly through your veins,
and you would return to the fields of your
summer conquests with bright eyes, bloom-
ing cheeks and health vastly improved.

Well, just now, the sky is clouded over
and the wind sighs dismally around the
corner of the house, shaking down from
the trellis the queen of the prairie, the buds
of which are just beginning to peep forth
from the parent stem, but which will, in two
months hence, be white as a snow-flake,
rather a mass of them, and fragrant with
its wealth of roses; and I am prepared for
a rainy day.

You see the wide, yawning fireplace,
with its great "back-log" and ponderous
"front-log" upholding the mass of glow-

ing hot coals, and the easy chair in front
of it, and the book case handy at its
right.

That is the way I-enjoy myself; the
rains may beat and the wind howl, what
care I? I have comfort, the easy chair and
warm room; and pleasure, here are books,
ponderous histories, books of the poets,
or, if I tire of too much knowledge, there
are hosts of light literature, Frank Les-
lie's, Peterson's—the latest—Goldsmith's,
and many of other authors.

The rain has commenced; I shall sit me
down and indulge in a rare old dream-
spell. I shall build my air castles and
shall see them crumble; who knows?

ERNEST NORTH.

Twin Blue Lakes.

Alpine County can boast of more rugged
and precipitous mountain scenery than any
other county in the State—not only more,
but the boldest and roughest as well;
which secures a vast and unrivalled
amount of the grand and picturesque. Far
up among its great spires and peaks of
rough granite, we find small areas of val-
ley-land—bright spots of mountain grass-
plots, where the brightest and most gor-
geous flowers "bloom and blush unseen,"
purest and coolest streams take their first
steps, and healthiest breezes kiss the
meadow from May to December.

Sometimes we find a lake of purest
water nestled in these upper areas of the
mountains, and forming the mother-source
of large streams that find their way to val-
leys below, piercing the narrow defiles of
chaparrelled cañons and rocky passes.

The Twin Blue Lakes have a rare loca-
tion and delightful setting, situated
near to each other—so near they seem of
one birth; they are closely locked in by
dark forests and walls of granite. Being
so deep, their waters have a dark-blue
color. They are called "Twin Blue," and
are the fountain-head of several streams
which flow westward to the Pacific Ocean.
Here, also, the Carson takes its rise. The
waters of these twin lakes are very pure,
being fed with melting snows from the
high altitudes of the summits—"snow so
pure when it falls from the sky," and ly-
ing far above the dust and rubbish which
pollutes the purity of the "beautiful ele-
ment" in lower and more frequented re-
gions. So the Twin Blue Lakes, fed by
the cool, clear liquid of the melted snows,
are seldom rivalled in clearness, and afford
the speckled trout a most acceptable ele-
ment in which to sport and play. The an-
gler could not wish a more desirable place
to throw his delicate hook—and while
waiting the shy bite of the coquettish lit-
tle trout, his eyes may feast upon tower-
ing peaks and radiant beauty of mingling
shade and sunshine, tapering off among
the rocky crags, and spreading out again
upon the dark blue surface of the quiet
lake.

While Donner and Tahoe Lakes have
been the favorite subject of the artist's
skill, these fairy little spots in Alpine
county have so far been neglected. We
would suggest to some patient artist a
summer's retreat with brush and pencil to
the Twin Blue Lakes, and that he repro-
duce upon his canvas its delightful and
fascinating charms, with the magic touch
that guides the fingers of the truly gifted;
place upon the cloth the scenes now al-
most unknown and locked in the strong
arms of their snow-clad peaks, where,
through

"Wavering lights and shadows broke,
Rolling a slumbering sheet—
They saw the glimmering river seaward flow
From the inner land: far off, three mountain-tops,
These silent pinnacles of aged snow,
Stood sunset flushed."

—Lisle Lester.

Employment for Women.

The cultivation of roses is perhaps as
pleasant as well as profitable, (perhaps
equal to fruit in either case.) The writer
has seen them grown to some extent in the
vicinity of the birth-place of Florence
Nightingale, but the country round Adri-
anople, in Turkey, is the most famous lo-
cality for the rose crop. Perhaps the light
sandy loam, with an average temperature
of 60 or thereabouts, are among the suita-
ble conditions for its most successful cul-
tivation. The old damask, or cabbage
rose, is the only kind suitable for the pur-
pose of extracting oil or otto of roses. The
gathering of the petals commences about
April 20th, and continues until the middle
of June. In the district alluded to there
are seven thousand acres, yielding about
\$100,000 worth of oil, and giving light
healthy and pleasant employment to the
young persons of both sexes for miles
around.

In a cool showery season there is usu-

ally an abundant and longer harvest. On
the contrary, a very hot and dry season
the crop is usually light, and less pro-
ductive of oil. The rose harvest is a very
pleasant and joyous time, the air loaded
with the fragrance; and the villagers of
Bulgaria, noted for their love of song and
dance, make quite a festivity of it, so that
those who have visited the rose-fields or
traveled past them in the picking season
will remember it with pleasure. When a
suitable climate and soil can be had at a
reasonable rate, say \$10 per acre, as at the
Medway estate, in Eastern Georgia, near
Savannah, (and now in course of settle-
ment,) I see no reason to doubt that the
cultivation of roses may be made very
profitable.

Other plants are valuable for their ex-
tracts, as lavender, rosemary, thyme,
chamomiles, etc. I shall point out a list
of half-hardy greenhouse plants, which
can be cultivated in the open air at Med-
way, in my next; thus saving the use of
ashes and coal, and still be ahead of those
grown here; also the various small fruits
adapted to that soil and climate, and also
the early vegetables for Savannah and the
New York market.—*Revolution.*

Where Flowers Came From.

"Some of our flowers came from lands of
perpetual summer, some from countries
all ice and snow, some from islands in the
ocean. Three of our sweetest exotics origi-
nally came from Peru; the camelia was
brought to England in 1736, and a few
years afterwards the mignonette and heli-
otrope. Several came from the Cape of
Good Hope; a very large calla was found
there in the ditches, and some of the most
brilliant geraniums, or pelargoniums,
which are a spurious geranium. The ver-
bena grows wild in Brazil. The marigold
is a native African flower. A great num-
ber came also from China and Japan. The
little daphne was taken to England by
Captain Ross from almost the farthest land
he visited toward the North Pole. Some
of these are quite changed in form by cul-
tivation, others have become larger and
brighter, while others fall far short of the
beauty and fragrance of the tropics, de-
spite all care of florists and shelter of hot-
houses. When the dahlia was brought to
England it was a very simple blossom, a
single circle of dark petals surrounding a
mass of yellow ones. Others were a short
time after transplanted from Mexico, with
scarlet and orange petals, but still re-
mained simple flowers. Long years of cul-
tivation in rich soil, together with other
arts of skillful florists, have changed the
dahlia to what it now is—a round ball of
beauty."

Flowers are subject to change of size
and perfume, by introduction to different
climes. The Heliotrope in California is
about as large again as it is in Eastern
States—the perfume is heavier, and the
number of blossoms nearly double—roses
have less perfume, but more gorgeous
colors, and nearly all lemon varieties by
careful training, creep and climb to great
heights—this is evident in Sacramento
and Los Angeles. Fuschias have larger
blossoms, and attain the growth of large
shrubs in open air—geraniums become
trees, and cover fences, with their vigor-
ous spreading branches. Probably the
most gorgeous native flower in California
is the cactus; its crimson leaves of velvety
textures form a blossom as large as the
largest sized goblets, and one plant fre-
quently blossoms from fifty to eighty
blossoms at a time. In the Spanish
gardens in South California, this elegant
species of the cactus family is found in all
of its native beauty.

The oldest rose bush in the world is
trained upon the Cathedral of Hildes-
heim, in Germany. The stem is a foot
thick, and half a dozen branches nearly
cover the eastern side of the church, bear-
ing countless flowers in summer. Its age
is unknown, but documents exist that
prove that the Bishop Hezilo, nearly a
thousand years ago, protected it by a stone
roof, which is still extant.

CARE OF HOUSE PLANTS.—To keep plants
healthy the air should be kept moist, the
foliage must be frequently cleansed with
water, not merely sprinkled. It is a good
plan to have a cloth suitable for covering
the plants while sweeping. If a plant
seems sickly, see if it needs re-potting in
new soil, examine the roots, which may
be infested with insects. When you
water, give a generous supply, but do not
frequently give a small quantity. It is
just as important that the plant should be
kept clean, and have its nourishment regu-
lar, as it is for the human body.

YOUNG FOLKS' COLUMN.

The Little People.

A dreary place would be this earth,
Were there no little people in it;
The song of life would lose its mirth,
Were there no children to begin it;

No little forms, like buds to grow,
And make the admiring heart surrender;
No little hands on breast and brow,
To keep the thrilling love-chords tender.

The sterner souls would grow more stern,
Unfeeling nature more inhuman;
And man to stoic coldness turn,
And woman would be less than woman.

Life's song, indeed, would lose its charm,
Were there no babies to begin it;
A doleful place this world would be,
Were there no little people in it.

The Spider-Eater.

There have been numerous cases of men
who have risen from lowliness and pov-
erty to positions of honor and distinction,
but only one such case has come to our
notice in which the first upward step was
to devour a dish of spiders. This, how-
ever, is true of the late Dr. Heim, of Ber-
lin, whom the famous Blucher once
toasted as the "Field-Marshal of doctors."

Heim's father was a poor clergyman
with a salary of three hundred dollars, on
which, however, he managed to educate
six sons. When Ernest, the youngest,
was still a boy, they one day received a
visit from an army physician, whose gold
embroidered hat so struck the child's fancy
that he at once resolved to become a doc-
tor. One day at breakfast he made known
his resolution, but his father replied that
to give him a doctor's education was im-
possible; it would require far too much
money. The boy, however, stuck to his
determination.

"I shall be a doctor! I shall be a doc-
tor."

His father knew that the boy had a great
dread of spiders; and, thinking to change
his mind, said:

"Why, how can you ever be a doctor?
You are frightened when you see a spider,
and a doctor ought to be able to eat spi-
ders."

The boy's face wore a troubled expres-
sion, but from that time he was noticed to
be hunting in the kitchen, barn and sheds
for spiders. A fortnight after he presented
himself before his father, holding in his
hand a piece of bread and butter thickly
covered with large, fat spiders.

"Look, papa; I found it very hard but
I can do it now."

And forthwith he devoured, apparently
with great zest, the whole of the dainty
morsel.

"Well, I can be a doctor now, can't I?"
he exclaimed triumphantly.

The father's heart was touched. "If I
can manage it, you shall be, you spider-
ogre! You are too fierce for a parson."

And so Heim became a doctor.

A CHILD'S BEAUTIFUL FAITH.—Birdie
was only four years old, but she had al-
ready been taught that God loved her, and
always took care of her. One day there
was a very heavy thunder-storm, and Bir-
die's sisters and mamma even laid by their
sewing, and drew their chairs into the
middle of the room, pale and trembling
with fear. But Birdie stood close by the
window, watching the storm with bright
eyes.

"O, mamma! an't that bu'ful!" she
cried, clapping her hands with delight, as
a vivid burst of lightning burst from the
black clouds, and the thunder pealed and
rattled over their heads.

"It is God's voice, Birdie," said mam-
ma, and her own voice trembled.

"He talks velly loud, don't he, mamma?
S'pose it's so as deaf Betsy can hear, and
the over deaf folks."

"O, Birdie, dear! come straight away
from that window," said one of her sisters,
whose cheeks were blanched with fear.

"What for?" asked Birdie.

"Oh! because the lightning is so sharp,
and it thunders so loud."

But Birdie shook her head, and looking
over her shoulder with a happy smile on
her face, lisped out:

"If it funders, let it funder! 'Tis God
makes it funder, and he'll take care of me.
I ain't a bit afraid to hear God talk, Maizy."

Was not Birdie's faith beautiful?—Mam-
ma and sisters did not soon forget the les-
son.—*Sunday School Teacher.*

Poor men seek meat for their stomachs,
rich men seek stomachs for their meat.

DOMESTIC ECONOMY.

The Philosophy of Frying.

All housekeepers know that to fry well, their fat should be hot. But they do not attend to it half as scrupulously as they would if they understood the true philosophy of it. Boiling, bubbling hot fat cannot penetrate anything, and cooks to perfection; tepid fat penetrates everywhere, and does not cook at all, but actually prevents cooking. Any housekeeper who reads this, and chooses to profit by it, need never put any greasy, fried, half-cooked indigestible food upon her table.

The whole secret consists in having the fat boiling before the things are put in. There is one other condition which follows naturally from the first one, but which is almost invariably lost sight of even by good cooks, and that is that the fat should entirely cover the article to be fried. The reason of this is, that the part not at once covered by the fat remains cold, cools off the fat near it, and then absorbs the tepid fat just the same as if it never had been hot. Frying-pans should be deep, well filled, and heated to the boiling point, and then it is easy to turn out fried food nicely crisp, brown, and dry, on the outside, and perfectly soft, moist and well cooked within. It is a peculiarity of the outside crust of things fried in boiling fat that the fat itself drips off from it as readily as water; hence, well fried articles are neither greasy in appearance nor very greasy in reality. Frying ought to be as easy as boiling.—*Christian Union.*

TO POLISH SILVER, BRITANIA AND TIN.—A lady for whose judgment we have the highest respect, says the *American Rural Home*, declares the following to be worth the price of the *Rural Home* to all housekeepers in poor health. She accidentally discovered the effectiveness of the method awhile ago, has cleaned all her table-ware by it ever since, and says that very little strength is required, and that the polish is much the best she ever used: Sprinkle freely, the best kind of dry zinc—No. 1, such as painters use—after rubbing it fine with a knife, upon a soft flannel cloth, or the top of an old woolen stocking will answer, then rub the silver, etc., with the cloth, then brush off with tissue paper, or any clean soft cloth or paper, and all will be as bright as new.

SAVE YOUR BREAD CRUMBS.—Never throw away a bit of bread, if clean. Keep a shallow tin pan for the special purpose of drying stale bread. When the ovens are not in use, slip in the pan of bread scraps, leaving the oven door open, that they may not scorch. As fast as one installment is well dried, roll it fine, keeping one side of your bread board for that special purpose, and then sift it through a moderately coarse sieve. Put the bread crumbs into a bag, and suspend it in some cool dry place, adding to it as you get more dried. Crumbs thus saved are very useful for stuffing, or to roll chops, oysters, or scollops in, for frying, and just as good as cracker crumbs for every purpose.

TRY IT.—A well known writer on house-keeping says there are people who raise the best of wheat, year after year, and live on fine flour always, and have no idea how sweet, as well as healthful, the unbolted or Graham flour is. Make Graham mush as you do corn meal hasty-pudding, sifting the meal with your hand slowly into boiling water, stirring briskly meanwhile. A few minutes boiling seems to cook it sufficiently, though many cook it longer. Sweetened cream is an excellent dressing for it, and then if you add fresh berries!—well just try it. Many persons like it with unsweetened cream or milk, as they eat hasty-pudding.

TO PRESERVE PEGGED BOOTS AND SHOES. It is said that if pegged boots are occasionally dressed with petroleum between the soles and upper leather, they will not rip. If the soles of boots and shoes are dressed with petroleum they will resist wet and wear well. The pegs, it is said, are not affected by dryness after being well saturated with the liquid.

COTTAGE CHEESE.—Boil two chickens till tender, take out all the bones and chop the meat fine, season to your taste with salt, pepper and butter, pour in enough of the liquor they were boiled in to make it moist, put into whatever mold you wish, and when cold turn out and cut into slices. It is excellent.

Make the House Comfortable.

We have no patience with a man who allows the windows to rattle in the casements, while with a hammer, a few nails, a lath or two, and a little putty, he could, in an hour or two, make the house snug and comfortable. We believe in thorough ventilation, but it should be under our control. There are thousands of homes where the inmates spend a wretched winter simply for want of a little attention to such matters. See that the outside doors fit snug. A damper in the stove-pipe prevents the heat from going up the chimney, and saves fuel. See that the wood house is well supplied with dry wood ready for the stove, and that there is some kindling always prepared ready for use. Where coal is used and in the absence of charcoal, have a barrel of dry corn-cobs ready for starting fires.

Let the family room be well lighted, and make home attractive to the young people. Let there be no lack of good books and useful papers. Pleasant winter evenings at home constitute one of the great charms of country life. It is here that character is formed, and the future usefulness of our children in a great degree determined. A comfortable family room, warm beds, nutritious food, and plenty of sleep will enable a farmer and his family to spend the winter pleasantly and profitably. There is plenty work to be done, and the cold, instead of benumbing the faculties, will stimulate exertion. Do not spend your winter days by the stove, or in complaining of hard times.

A RELISH FOR BREAKFAST OR LUNCH.—Take a quarter of a pound of cheese, good, fresh; cut it up in thin slices and put in a spider, turning over it a large cupful of sweet milk; add a quarter of a teaspoonful of dry mustard, a dash of pepper, a little salt and a piece of butter as large as a butter-nut; stir the mixture all the time. Have at hand three Boston crackers finely powdered or rolled, and sprinkle them in gradually; as soon as they are stirred in, turn out the contents into a warm dish and serve. It is very delicious.

SILVER TIPPED SHOES.—Shoes are an important item in the expense of clothing children, as every parent will understand. They invariably wear out their shoes at the toe first, and not unfrequently before the other parts are a quarter worn. Children's shoes with silver or copper tips never wear out at the toe, and last twice as long as the ordinary shoe. Housekeepers will do well to remember this fact.

Mechanical Hints.

FACING OIL STONES.—A correspondent of the *Scientific American* says:—I have in the course of my life spent a good deal of time in facing off my oil stones. I have used sand on a board, wet and dry, or an old mill stone, or a hard brick. If the oil stone was soft, it could be cut or rubbed down in a short time; but if a hard one it was a serious job. The thought struck me about two years ago that emery would be the thing to quickly cut a hard stone, which I have. I dressed of a white pine board, put a thin coat of glue on it, when dry put on another, sprinkled coarse emery on the glue, rubbed it in well, and when dry put on another coat of glue and emery. I have been using it ever since; it does not take one-tenth of the time to face off that stone than it formerly did with sand, etc. This may save some one some hard rubbing.

METAL FOR BEARINGS.—The following alloy has been found to give highly satisfactory results for plummer blocks, axles, brasses, etc. To 30 parts of melted copper are added 70 parts of antimony; the mixture is melted, and run out into thin plates. These are then re-melted with tin in the proportion of 90 parts of tin to 10 parts of the copper and antimony, and run out again into thin plates. When used, it is re-melted, and run into the forms required. M. Volk, of Regensburg, has employed an alloy for many years of which the following are the component parts:—Copper, 5-6 per ct.; antimony, 11-2 per ct.

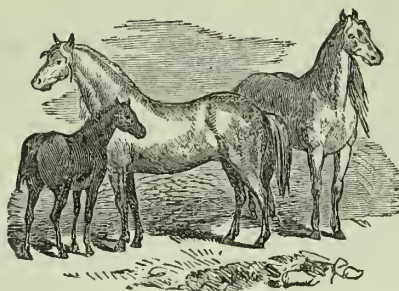
LIQUID POLISH.—The preparation of blacklead ready for use in a fluid state, is a recent English invention. The composition adopted consists of blacklead, such as is used for polishing stoves and for other uses, combined with turpentine, water and sugar or saccharine matter, and the proportions which have been found to answer well are, to each pound by weight of the blacklead, one gill of turpentine, one gill of water, and one ounce of sugar; but these proportions may be varied, and in some cases all the ingredients are not necessary.

FULL BLOOD PERCHERONS.

THE WHITE PRINCE!

The Percheron or Norman Horse, WHITE PRINCE, was imported into Ohio from France in July, 1870, accompanied by

A FULL BLOODED MARE.



White Prince was five years old last spring, and possesses the square, compact, solid form, with the good action of the Percheron race.

The Mare was bred in Ohio, from Imported Percheron Stock, and has been

Awarded Three Premiums

at the State Fair in Ohio (that is as often as she could compete), as the Best Mare in the State.

Louisa, at four months old, weighed 640 pounds; girths, 5 feet; weight is not a matter of great interest; but the square, compact, nice form which she presents, is a matter to be especially noted.

I also at the same time (December last) imported

TWO THREE-QUARTER BLOOD MARES,

one of which has a promising horse colt.

From the above it will be seen that I am able to raise Full Bloods and High Grades.

For any further information, address

W. C. MYER,

11v2-1am6m

Ashland, Oregon.

TO WOOL GROWERS.



The undersigned have received, per ships Grace Darling and Marianne Nottebohm, from Newcastle, N. S. W., and offer for sale,

Fifty Merino Rams,

Selected from the best stock of Saxony and French Merinos in Australia. These animals are young and in fine condition and are well worthy the attention of Sheep Raisers. They can be seen at Sweeney's Stock Yards, corner of Howard and Tenth streets, S. F.

WILLIAMS, BLANCHARD & CO.,
218 California st, San Francisco.

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STEELE'S GLYCERINE LOTION

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WILCOX'S IMPROVED STEAM WATER LIFTER,

With neither Engine, Piston, or Plunger.



The most Simple, Durable, and in all respects the most Economical of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

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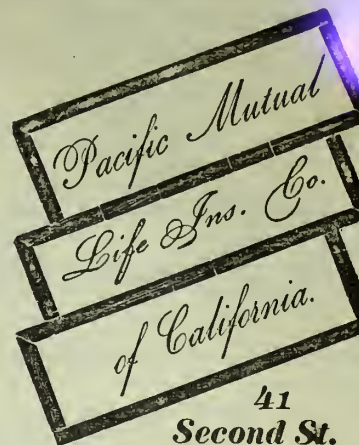
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Daily Weather Record*

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK ENDING WEDNESDAY, FEBRUARY 14, 1872.

Place of Observation.	Date.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Wind, reduced to base of observation.	State of Sky.	State of Weather.
San Francisco.	Thurs. 8	30.12	55.5	Cal.	4-4	10	Threat.	
	Fri. 9	30.02	58.9	S. W.	13	Brisk	4-4	Rain
	Sat. 10	30.25	59.8	Cal.	4-4	37	Threat'g	
	Sun. 11	29.68	53.3	Cal.	2-4	Fair	4-4	Foggy
	Mon. 12	30.15	49.7	N. W.	4-4	Threat'g	4-4	Threat'g
	Tu. 13	30.17	46.8	N. W.	4-4	Threat'g	4-4	Threat'g
	Wed. 14	30.12	43.3	S. E.	3	Gentle	4-4	Clear
San Diego.	Thurs. 8	30.18	47.9	N.	1	Light	2-4	Fair
	Fri. 9	30.16	52.9	N. E.	2	Light	2-4	Fair
	Sat. 10	30.09	50.9	N. E.	2	Light	1-4	Fair
	Sun. 11	30.09	50.9	N. E.	2	Light	1-4	Fair
	Mon. 12	30.09	50.9	N. E.	2	Light	1-4	Fair
	Tu. 13	30.09	50.9	N. E.	2	Light	1-4	Fair
	Wed. 14	30.09	50.9	N. E.	2	Light	1-4	Fair
Portland, Or.	Thurs. 8	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Fri. 9	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Sat. 10	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Sun. 11	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Mon. 12	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Tu. 13	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
	Wed. 14	30.02	44.8	S. E.	4	Gentle	4-4	Light Rain
Virg'a, M. T.	Thurs. 8	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Fri. 9	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Sat. 10	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Sun. 11	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Mon. 12	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Tu. 13	29.55	25.8	W.	11	Fresh	3-4	Cloudy
	Wed. 14	29.55	25.8	W.	11	Fresh	3-4	Cloudy
Corvane.	Thurs. 8	30.07	36.9	S. E.	10	Fresh	4-4	Cloudy
	Fri. 9	30.10	37.9	Cal.	3-4	Cloudy	4-4	Cloudy
	Sat. 10	30.10	37.9	Cal.	3-4	Cloudy	4-4	Cloudy
	Sun. 11	29.94	27.6	N. W.	8	Fresh	2-4	Fair
	Mon. 12	29.94	27.6	N. W.	8	Fresh	2-4	Fair
	Tu. 13	30.24	37.4	N.	6	Fresh	3-4	Cloudy
	Wed. 14	30.07	32.9	N. E.	5	Fresh	3-4	Cloudy
Chayenne.	Thurs. 8	29.82	36.4	W.	14	Fresh	4-4	Cloudy
	Fri. 9	29.79	26.6	N.	19	Brisk	3-4	Cloudy
	Sat. 10	29.79	26.6	N.	19	Brisk	3-4	Cloudy
	Sun. 11	29.49	26.6	W.	24	Brisk	2-4	Cloudy
	Mon. 12	29.49	26.6	W.	24	Brisk	2-4	Cloudy
	Tu. 13	29.49	26.6	W.	24	Brisk	2-4	Cloudy
	Wed. 14	29.49	26.6	W.	24	Brisk	2-4	Cloudy
Denver.	Thurs. 8	29.97	25.5	S. W.	6	Fresh	4-4	Cloudy
	Fri. 9	29.81	34.4	W.	16	Brisk	3-4	Cloudy
	Sat. 10	29.81	34.4	W.	16	Brisk	3-4	Cloudy
	Sun. 11	29.81	34.4	W.	16	Brisk	3-4	Cloudy
	Mon. 12	29.81	34.4	W.	16	Brisk	3-4	Cloudy
	Tu. 13	29.81	34.4	W.	16	Brisk	3-4	Cloudy
	Wed. 14	29.81	34.4	W.	16	Brisk	3-4	Cloudy
Omaha.	Thurs. 8	30.05	19.4	S.	1	Light	1-4	Fair
	Fri. 9	30.05	19.4	S.	1	Light	1-4	Fair
	Sat. 10	29.61	28.8	Cal.	1	Light	1-4	Fair
	Sun. 11	29.61	28.8	Cal.	1	Light	1-4	Fair
	Mon. 12	29.61	28.8	Cal.	1	Light	1-4	Fair
	Tu. 13	29.61	28.8	Cal.	1	Light	1-4	Fair
	Wed. 14	29.61	28.8	Cal.	1	Light	1-4	Fair
Davenport, I.	Thurs. 8	31.30	17.6	S. W.	1	Light	2-4	Clear
	Fri. 9	31.30	17.6	S. W.	1	Light	2-4	Clear
	Sat. 10	31.30	17.6	S. W.	1	Light	2-4	Clear
	Sun. 11	31.30	17.6	S. W.	1	Light	2-4	Clear
	Mon. 12	31.30	17.6	S. W.	1	Light	2-4	Clear
	Tu. 13	31.30	17.6	S. W.	1	Light	2-4	Clear
	Wed. 14	31.30	17.6	S. W.	1	Light	2-4	Clear

* This report is continued from page 103 of this issue.

Amount of Rain Measured at San Luis Obispo, Cal.

EDITORS PRESS:—I send herewith a copy of my rain measurements in this town:

MONTH.	YEAR.	YEAR.	YEAR.
	1869-70.	1870-71.	1871-2.
October	.84	.68	.00
November	.66	.38	2.40
December	.78	2.90	13.93
January	.71	1.51	5.16
February	.48	4.43	
March	.74	.00	
April	2.40	2.79	
May	.85	.28	

Total.....11.83 12.97

The rains this season have occurred as follows:

Nov. 26, 1871.....	1.90
Nov. 28, 1871.....	.50-2.40
Dec. 17 and 18, 1871.....	2.00
Dec. 20 and 21, 1871.....	1.10
Dec. 23 and 24.....	6.00
Dec. 27 to 30.....	4.83-13.93
Jan. 1, 1872.....	1.64
Jan. 6 to 9, 1872.....	3.32-5.16

The rain of December 23d was the heaviest I have ever seen—nearly the whole of it having fallen within 12 hours. These measurements are correct—being the mean of the records of two gauges placed in different positions, which seldom vary the tenth of an inch.

Respectfully, W. W. H.

Rainfall at Sacramento.

[By T. M. LOAN, M. D., Secretary State Board of Health.]

Jan. 1, 1872. Rainfall for the season to date.....12.42 inches
Feb. 11, 1872. Rainfall since above date.....6.19 inches

Total for the season up to date.....18.61 inches

REMARKS.—The theory was advanced in some remarks relating to our annual rain table January 1, 1871, and which has been sustained thus far, that there is a general correspondence between the amount of rain falling before the last of January of each season, and the amount which falls afterwards. Thus if the rainfall is below the average, as for instance in 1861-4, before the last of January, it will prove deficient afterwards; and on the other hand, if excessive before the last of January, as in 1867-8, it will maintain the same proportion subsequently. Basing our calculations on this standard, we may then expect, according to the above data, at least six inches more of rain during the balance of the present season, which will bring up the total to 24½ or 25 inches. Our agricultural friends will make a note of this, and regulate their operations accordingly.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., Feb. 15.

FLOUR—We note a fair local and interior demand with a moderate inquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 1,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.50@5.75; extra, in sacks, of 196 lbs. \$6.50@6.75. Standard Oregon brands, extra, may be quoted at \$6.25@6.50.

WHEAT—The local demand has been light and there is not much inquiry for export. The local mills are idle, therefore the demand is nominal; receipts small. Sales aggregate 15,000 sacks fair to choice at \$2.12½@2.25

100 lbs. Quotable at close at \$2.15@2.25 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 5d. per cental.

BARLEY—Has been inactive during the week, there is however, a good demand for shipping to the interior. Sales embrace 7,000 sacks ordinary coast to choice bay, at \$1.40@1.57½, which is the range at close.

OATS—Demand has been limited during the week under review. Sales 4,000 sacks ordinary coast to choice bay, at \$1.65@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.55@1.60 for yellow and white respectively per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.50 per 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.25@2.37½ per 100 lbs.

RYE—According to quality is quotable at \$2.25@2.35 per 100 lbs.

STRAW—Quotable at \$7.50@8.50 per ton by the cargo.

BRAN—Selling at \$25.00 per ton from the mill.

MIDDLINGS—For feed, are selling at \$32.50 per ton from mills.

OIL CAKE MEAL—In good demand at \$40 from the mill.

HAY—Receipts have been fair, and prices at close are \$15.50@23.00 for fair to choice per ton.

HONEY—We quote Los Angeles comb at 12½@15c. Potter's in 2-lb cans, \$4 per doz.

POTATOES—Receipts have been very heavy during the past week. Tomatoes, 50c@65c; Petaluma, 60c@75c; Humboldt, 75c@85c. per ctd.

HOPS—The range is 50c@65c.

HIDES—During past week 965 Cal. dry sold at 18@19½ and 993 salted at 8@9½c.

WOOL—Nothing is doing; quotations are nominal.

TALLOW—Market quiet at 8@9c per lb.

SEEDS—Flax 3c.; Canary, 5@7c., Alfalfa, 15@17c.; Mustard—California Brown, 3@6c.; Cal. White 3½@4½c. per lb.

PROVISIONS—California Bacon 13½@14c.; Oregon, 14½@15c.; Eastern do. 13½@14c.; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14@14½; Oregon, 15½@16c.; California Sugar-cured Hams, 16½@17c.; Oregon do. 17@18c.; Eastern do. 18@20c.; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.40@3.60; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$1.00@1.50 per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c.; Pecan, 25c per lb.; Cal. Walnuts, 12½c.; Hickory, 12c.; Brazil, 16c.; Chili Walnuts, 10c.; Eastern Chestnuts, none in market; Cocoanuts, \$6.00@8.00 per 100.

FRESH MEAT—Market has remained firm since last report. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 10@12½c per lb. do. 2d quality 9@10c per lb.; do. 3d do. 6@7c.

VEAL—Quotable at 7@12½c.

MUTTON—8@15c. per lb.

LAMB—None in market.

PORK—Undressed grain-fed is quotable at 6½@7½c. dressed, grain-fed, 10@10½c. per lb.

POULTRY—Live Turkeys, 17@19c. per lb.; dressed, 20c. per lb.; large Hens 7.50@8.50. Roosters, \$8.00@9.00 per dozen; Spring Chickens, \$8.00@9.00; Ducks, tame, \$10.00@11.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in free demand; it may be quoted at 25@35c; California firkin butter, 20@25c. Pickled, 20@25c. Eastern firkin, 20@25c. per lb.

CHEESE—California, 18@20c, Eastern, 17@18c. per lb.

EGGS—California fresh, 35@40c. per doz.

LARD—California 12½@13½; Oregon in bbls. and kegs 12½@13c.; Eastern in cases 14@14½c.; do in tcs. 12½@13c. per lb.

FRUIT.

Tah. Oranges, M. \$20 00@25 00 Cal. do 10 00@25 00
California do 10 00@25 00 Bananas, bunch 2 00@3 50
Limes, Mex. 10 00@25 00 Apples, eating, bx 2 00@2 50
Austin Lemons, bx 4 00@5 00 do cooking, bx 2 00@2 50
Sicily do 10 00@25 00 Pears, box 1 00@2 00

DRIED FRUIT.

Apples, do 6 00@7 00 Pitted, do 2 00@2 25
Pears, do 8 00@9 00 Raisins, do 10 15
Figs, do 7 00@8 00 Black Figs, do 8 10
Apricots, do 8 00@9 00 White, do 16 00
Plums, do 5 00@6 00

VEGETABLES.

Cabbage, do 1 00@1 25 Marf. Squash, ton 12 00@15 00
Garlic, do 1 00@1 25 Asparagus, do 20 00
Rhubarb, do 1 00@1 25 New Potatoes, do 3 00

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head.

BAGS AND BAGGING—The market is firm for all kinds. Burlap sacks 15c; Flour sacks 10½@11½c. for qrs. and 15½@16½c. for hfs. Standard Gunnies are jobbing at 23c@24c. Wool 75@80.

BOOTS AND SHOES—There has been an active demand during the week under review for goods in this line at unchanged rates.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do. dressed \$23; Spruce \$17@18; Redwood \$16@30 for rough and dressed, and 12 for refuse.

We quote Laths at \$2.75@3.00; Shingles \$2.50@2.75. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic,	\$31 00 to \$32 50
Refuse do do	20 00 to 21 50
Merchantable surfaced and rough clear	28 00 to 30 00
Refuse surfaced and rough	18 00 to 20 00
Merchantable beaded flooring	28 00 to 30 00
Refuse do do	18 00 to 20 00
Merchantable rough	15 00 to 16 00
Refuse do do	11 00 to 12 00
Panicy Pickets	22 50 to 25 00
Rough Pickets	15 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manila, 19½; Rio 19½@20.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 5c., and in cases at \$8.00; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern 1.62½, per ream.

PAINTS—We quote White Lead at 10@12½c; Whiting, 2½c.; Chalk 2c.; Paris White 3c.; Ochre 3@3½c.; Venetian Red 3@5c.; Litharge 9@11c. per lb.

RICE—Sales of China No. 1 at 8½@8½c and No. 2 at 7½@8½c per lb; Siam, quotable at 6½@7½c in mats; Carolina Table, 10@11; Hawaiian, 8½@9c per lb.

SUGAR—We quote Cal. Cube at 14½c; Circle A Crushed, 14½c, and Granulated, 14c; Yellow Coffee and Golden C, 12½@13c; Hawaiian 8@11½c as extremes per lb.

SYRUP—Prices may be given as follows: 82½c in bbls, 85 in hf bbls, and 90c in kegs.

SALT—California Bay sells at \$5@14;

California Vine Growers and Wine and Brandy Manu- facturers' Association.

An adjourned meeting of the above Association will be held at SACRAMENTO on WEDNESDAY, the 21st inst., at 3 o'clock P. M., at which time Committees on the following subjects will report, viz: "On the Cultivation of the Grape, and Pruning the Vine;" "Wine Making and Clarification of Wine;" "Manufacture of Brandy from the Grape;" "Casks, Vessels, Press and Machinery;" "Wine and Brandy Statistics;" "Memorial to Congress to have Grape Brandy put on the Free List;" "The Best Varieties of Grapes for General Use."

Other matters of great interest to the Vine Industries will be considered, and all interested in any way are invited to attend. By order,

fe17-td I. N. HOAG, Secretary.



THE
CALIFORNIA COTTON GROWERS'
—AND—
Manufacturers' Association.

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Capital Stock, \$500,000, in Shares of \$20 Each.

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All orders will receive prompt attention.
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Evergreen and Deciduous Trees, Shrubs, Roses, etc.
10,000 Eucalyptus (including Blue Gum).
30,000 Monterey Cypress, Pinus, Insignis, Lawson Cypress, Acacias in variety, Magnolia, Oleander, Orange and Lemon Trees, etc., etc., at Lowest Rates.
Orders attended to. Address

M. KING, Nurseryman,
Oakland, Cal.

Grape Vines and English Walnuts.

I have a large lot of one year old, well rooted, White Muscat of Alexandria Grape Vines, which I will sell at \$6 per 100 or \$50 per \$1,000. Also, strong-rooted, one-year old English Walnuts, at \$12 per 100, or \$100 per 1,000; packed and delivered at the R. R. Depot. Orders may be left with A. Lusk & Co., San Francisco, or sent by mail to the subscriber, San Jose; P. O. Box No. 494. fe3-1m G. W. McGREW.

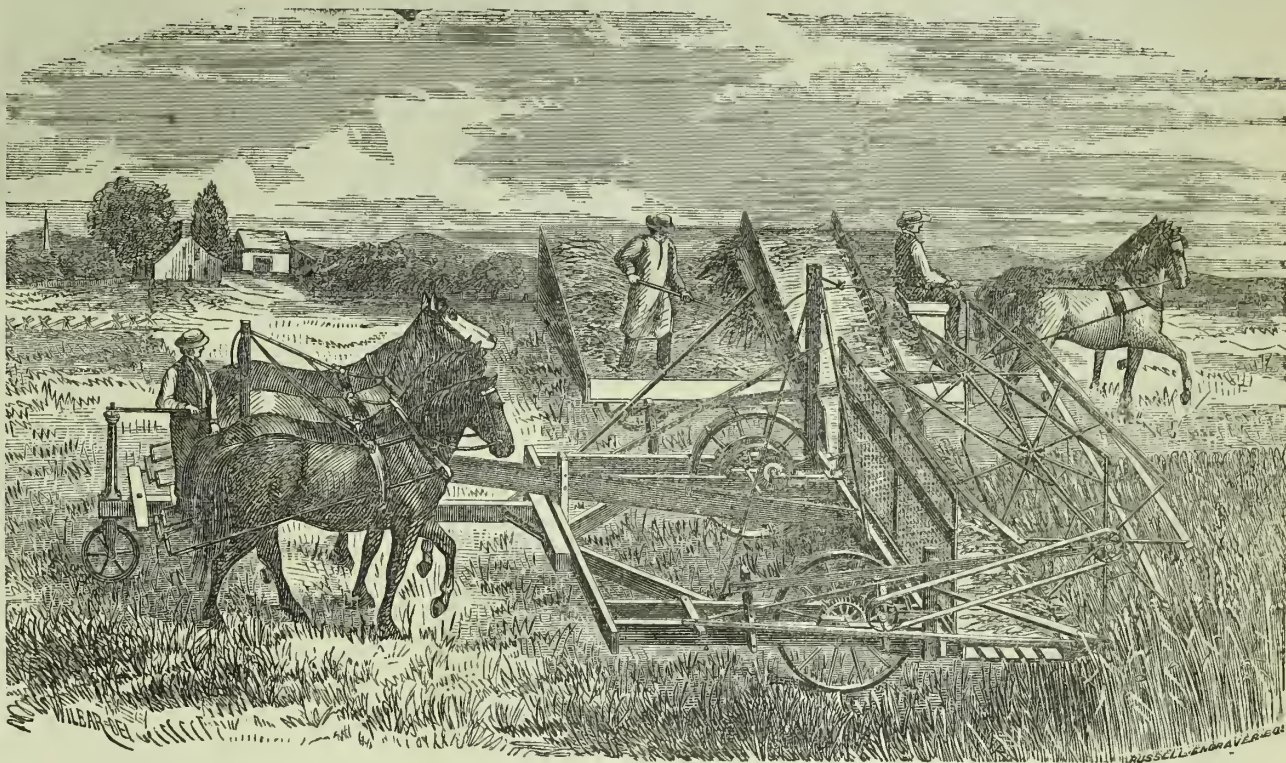
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SEED GRAINS, of all kinds, a specialty.
WHEAT—Choice Seed—Bay Coast, Australian, Chili, Sonora, and other varieties.
BARLEY—Coast and Bay, for Feed and Seed.

BALD BARLEY—Superior Seed for Hog Feed or Hay.
OATS—Norway and other kinds, selected and clean.
CORN—White and Yellow, Eastern and California.
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FRESH CUT FLOWERS

Every Day.

Always on hand, a Large and Fine Assortment of

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Walls Whitened or Tinted.

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Pacific Oil and Lead Works,
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Manufacturers of

Linseed and Castor Oils,

OIL CAKES AND MEAL.

Highest price paid for Flax Seed and Castor Beans delivered at our works.

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MATTESON & WILLIAMSON'S

AMERICAN CHIEF



GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
14v2-3m Stockton, Cal.

HILL'S PATENT
EUREKA GANG PLOW,

The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use.

They are made of the best material, and every Plow warranted.
They are of light draught, easily adapted to any depth, and are very easily hauled.
They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc. 16v23-1f

BAKER & HAMILTON,

Sacramento and San Francisco.

—IMPORTERS OF—



HARDWARE,
Farming Implements,
Machines, Etc., Etc.]

Gang Plows,

Single Steel Plows,

Iron Plows,

Harrows,

Cultivators,

Seed Sowers,

Grain Drills,

Etc. Etc.

18v2-3m

Gang and Single Plows.

I am prepared to furnish my popular Gang and Single plows, of the lightest draft (best Plow to scour in sticky soil), and the most efficient Plow made. My leverage for raising the gang has no equal—a thirteen year old boy can work it with ease. I make any pattern of mould desired, to order. Twenty years experience in plow making enables me to demonstrate all I say, and every Plow is warranted to do all I recommend it to perform.

Send your orders early, and for further information apply to
A. ELLISON, Patentee and Manager,
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JACKSON MICHIGAN WAGONS.



The large sale of the above WAGONS has induced a number of persons to try and sell other Eastern-made Wagons, none of which have any proof that they will stand in this dry climate. JACKSON WAGONS have the highest certificates from use for ten to fourteen years, consequently the buyer runs no risk in purchasing the Jackson Wagons. All sizes for sale low by

J. D. ARTHUR & SON, San Francisco,
N. B.—Warranted for three years. 21v2-3m

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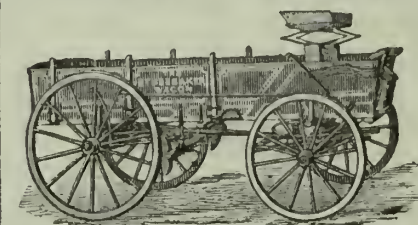
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Although about two hundred different styles of fences have been invented and patented in the United States within the past ten years, yet this Fence, for GENERAL FARM USE, stands at the head of the list. This is a Virginia invention, and the actual cost of the Fence complete in that State is less than fifty cents per rod. Three men can put up six hundred yards per day. Price of territory, and circular with full description of fence, sent on application.

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STUDEBAKER WAGONS.



Have become

The Standard Wagons of the Pacific Coast.

For QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.

IRON AXLE,
THIMBLE SKEIN,
HEADER AND SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

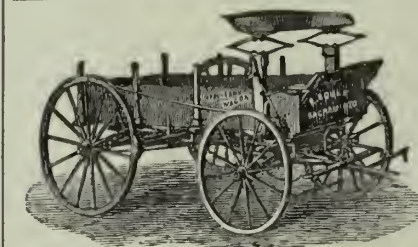
Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.
The attention of DEALERS is especially requested.
Send for CIRCULAR and PRICE LIST.

2v3-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.

WEBSTER'S PIONEER
Agricultural Warehouse,

No. 201 and 203 El Dorado street,
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Agency and General Depot for the San Joaquin Valley for the sale of the Celebrated STUDEBAKER WAGONS and all kinds of Standard Farming Implements.
4v3-3m



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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Corner Tenth and I streets,
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AVERILL'S
CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
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SUCCESSOR TO

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House and Sign Painters,

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Country Orders Attended to

With Punctuality, Cheapness and Dispatch.
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113 Commercial street, between Davis and
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SAN FRANCISCO,

Has been engaged for the last ten years in the
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BOX AND THERMOMETER CHURNS

In this city.

Also manufactures all kinds of Implements generally
used in Dairies. 6v3-3m

J. BREUNER & CO.,

Importers, Jobbers and Manufacturers of



FINE FURNITURE,

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Very Lowest Prices.

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PIANO FORTES,

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Mason & Hamlin's Cabinet Organs.
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Also Importer of Sheet Music, Music Books and Musical Instruments. Finest Violin and Guitar Strings.
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The old Pioneer Broom Factory—Established August, '56. No. 82 J street, between Third and Fourth, Sacramento. All kinds of

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Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubs and Pails. 16v2-3m

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Near Third Street.....San Francisco.
C. H. GRUENHAGEN & CO.

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IMPORTERS OF

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AGRICULTURAL IMPLEMENTS.

The attention of Farmers is respectfully called to the following Superior

GANG PLOWS,

Which we now offer as the BEST hitherto made:

PACIFIC RAILROAD,

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EUREKA.

General Agents for the Pacific Coast for the Celebrated

WORLD MOWERS AND REAPERS,

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IRON PIPE, RUBBER HOSE, RUBBER AND
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WIRE, ALL AT LOWEST

MARKET RATES.

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IMPROVED NOISELESS

Family Sewing Machine

IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.

Call on or address

WILLCOX & GIBBS S. M. CO.,

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THE CELEBRATED

"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins. Sweeny, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors,

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CLABROUGH & BRO.,
GUN MAKERS,
80 BATH STREET, BIRMINGHAM, ENGLAND.



SAN FRANCISCO HOUSE—No. 630 Montgomery street. The only California House that are ACTUAL MANUFACTURERS.

We manufacture in England for our California trade, to the order of our resident partners, every description of

Sporting and Defensive Firearms.

Sporting Goods and Gunsmiths' Stock of all kinds constantly on hand, Wholesale or Retail. 3v3-3m

KELSEY'S NURSERIES.



OAKLAND.

Established in 1852.

CITY DEPOT,

317 Washington Street.....SAN FRANCISCO.

The Proprietor having upwards of 100 ACRES OF NURSERY GROUNDS, well stocked with all the leading and best varieties of Fruit Trees and Fruit Bushes; also Evergreen and Deciduous Trees and Shrubs, including the rarest of Conifers, can fill all orders on the most reasonable terms and with dispatch.

Choice Roses and Pot Plants of every variety. Trees and Plants securely packed to travel any distance.

FOREST TREES

of Australia, Europe, China and Japan; in fact, we aim to have and to get all and everything desirable. Parties planting can find in this establishment whatever may be wanted, for use and beauty, in furnishing a place without being obliged to go from one Nursery to another.

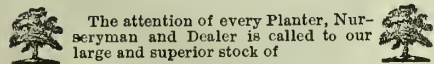
W. F. KELSEY, Proprietor.

21v2-3m

J. ROCK'S NURSERIES,

SAN JOSE.

Fruit and Ornamental Trees.



The attention of every Planter, Nurseryman and Dealer is called to our large and superior stock of

Fruit and Ornamental Trees,

Grape Vines and Small Fruits,

Shrubs and Plants, Etc., Etc.,

IN LARGE QUANTITIES, AT LOWEST RATES.

Catalogue furnished on application.

21v2-4f

JOHN ROCK, San Jose, Cal.

TREES

AND PLANTS FOR SALE AT THE LIBERTY NURSERIES,

Petaluma, Cal.

The stock I offer for sale this season is as varied and complete as can be found at any Nursery on the Pacific Coast. It consists of

Apples, Pears, Plums, Peaches, Apricots, Nectarines, Figs, Quinces, Cherries, Oranges, Pomgranates, Mulberries, Grapes, Currants, Gooseberries, Blackberries, Raspberries, Strawberries, etc.

Almonds, English Walnuts, California and Eastern Black Walnuts, Butternuts, American, Japan and Spanish Chestnuts.

Locusts, Maples, Elms, Poplars and Willows. Evergreen Trees and Shrubs in great variety.

Deciduous Flowering Shrubs in variety, including a choice collection of Roses.

Also a choice collection of Bedding and Conservatory Plants, selected from the best new varieties (importation of 1871).

For complete list send for Descriptive Catalogue. The above stock of Trees and Plants will be sold

At the Lowest Market Rates

of the reliable Nurserymen, and guaranteed to be true to name and label.

All orders from unknown persons must be accompanied with the Cash.

Trees packed in the best manner and delivered to Railroad or Boats in Petaluma for shipment to all parts.

Address

W. H. PEPPER,

21v2-3m

Petaluma, Cal.

FRUIT AND ORNAMENTAL TREES.



GLEN GARDENS,

ONE MILE EAST FROM SACRAMENTO.

My stock embraces all the celebrated varieties that are favorably known, including the justly celebrated "HALE'S EARLY PEACH," the Salway, Freemason and other new varieties. Also, GRAPEVINE AND CUTTINGS of the leading sorts; 100,000 Blackberry and Raspberry plants of the most popular kinds, warranted true to name; Mulberry Trees, for feeding Silkworms, in quantities to suit. All offered at low prices.

Orders sent by mail to the Proprietor will be promptly filled.

2v3-3m

E. F. AIKEN, Proprietor.

FRUIT AND SHADE TREES.

Evergreens, Ornamental, and FLOWERING PLANTS, and all general productions of the Nursery and Garden.

All varieties of Fruit, from the earliest to the latest in cultivation. All warranted true to name.

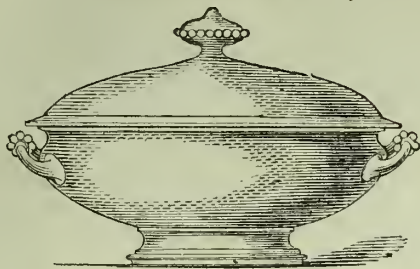
Prior to suit the times. Wholesale and retail. Call and examine stock at Depot, J street, between Seventh and Eighth, next to P. H. Russell's grocery store.

3v3-3m

Nurseryman and Florist, Sacramento.

HAYNE & LAWTON,

Importers, Jobbers and Retailers of



English and French China Dinner Ware, Foreign and American Glassware, Ivory-Handle Table and Dessert Knives.

ALSO,

Manufacturers of Superior Silver-Plated Ware on White Metal.

MARKET STREET, UNDER THE GRAND HOTEL,.....SAN FRANCISCO, CAL.

4v3-1am3m

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Do you want to buy

SEEDS AND PLANTS

that you may surely rely on? Go to

SEVIN VINCENT & CO.,



the well-known Seed Dealers, 605 Sansome St., between Washington and Jackson streets, San Francisco, and Brooklyn, Alameda county. Mr. Sevin Vincent is the only Seed Grower of California. He guarantees the superior quality of his seeds, and all those imported he tests with the greatest care before selling. Be sure he will sell you the best and cheapest.



jrl3-2m8t

Fruit, Shade and Ornamental Trees.

The undersigned has now on hand the LARGEST AND BEST COLLECTION of Fruit, Shade and Ornamental Trees in this city, and is prepared to fill all Orders for every article in the line. Parties about planting would do well to call and examine our stock before purchasing elsewhere. All orders from the country promptly attended to and packed with care.

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THOMAS MEHERIN,

Cor. Oregon and Battery sts., opposite P. O., SAN FRANCISCO.

TREES AND PLANTS

By the 100, 1,000 or 100,000, both

Wholesale and Retail, at the

Lowest Market Rates, at the CAPITAL NURSERIES, SACRAMENTO, Cal.

Send for Catalogue, Price List and printed directions

ROBERT WILLIAMSON, Proprietor.

Office and Tree Depot at U street, between Fifteenth and Sixteenth streets, Sacramento, Cal. 22v2-1m

Orange Trees! Orange Trees!!

I now offer to Planters and Dealers a large and splendid stock of ORANGE, LEMON, LIME, and ENGLISH WALNUT TREES. Also, a limited amount of

Grafted Orange on Lemon Stock.

At Lowest Market Rates. Address P. O. Box 265, Los Angeles, Cal. 13v2-6m

THOS. A. GAREY.

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Wholesale and Retail Dealer in

All Kinds of Garden Seeds, Grass Seeds, Seed Wheat, Seed Barley, Seed Potatoes.

Also, ALFALFA, of California growth and of best quality. All at Lowest Prices.

All orders from a distance filled with dispatch, and Seeds warranted Pure and Fresh. 2v3-3m

IMMENSE STOCK OF APPLE,

AND OTHER

FRUIT TREES, VINES AND PLANTS,

Of Finest Quality, at Astonishingly Low Rates.

Extraordinary inducements to wholesale buyers. Catalogues Free.

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SHADE TREES! SHADE TREES!

LOCUST, LOMBARDY, POPLAR, CIRCASSIAN and States Mulberry, California and States Black Walnut, Wild Cherry, Weeping Willow, etc., growing in my Nursery, 3 1/2 miles below Sacramento (Near Sutterville), and which I now offer to Planters and the Trade at prices to suit the times. Trees delivered to cars or steamers, or to any part of the city, without additional charge. Orders by mail or express promptly attended to.

2v3-3m J. S. HARRISON, Sacramento.

Flowers! Flowers! Flowers!

DEPOT OF SACRAMENTO NURSERY, K street, Sacramento, next the International Hotel. As large and varied a lot of Plants, Shrubs, Evergreens, Shade Trees, Bulbs, etc., as can be found in the State, Camellias and Japonicas of all colors. Hanging-Baskets, etc. Satisfaction guaranteed. Send orders to ANTHONY GAFFANESCHI, Sacramento Nursery, Eighteenth and C sts., Sacramento.

6v3-2m

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1857. SEEDS. 1872.

15 Years Established.

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Garden,

Flower,

Field,

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Tree and Shrub,

Grass and Clover Seeds,

Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

My annual catalogue is ready and will be forwarded on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

W. R. STRONG,

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New York Seed Warehouse,

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SAN FRANCISCO, CAL.,

Importer and Dealer in

Garden, Field, Fruit, Flower

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Pure Alfalfa, Mesquite Grass, Etc.

DUTCH BULBOUS ROOTS,

Imported Direct from the

First Flower Nurseries, in Vozelenzang,

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New California raised ALFALFA CLOVER SEED, sold in quantities at J. P. SWEENEY & CO'S

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Surprise Oats,

At \$8 per 100 lbs. All kinds of

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ROOTED PLANTS,

Of the above valuable textile, raised in this State, for sale by the undersigned, in lots to suit, where further information in regard to Soil, Cultivation, etc., will be given.

Inquire of

J. P. SWEENEY & CO.,

Seedsmen, 409 Davis street, S. F.,

Or of

JOSEPH GRAHAM,

22-v2-3m

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1871. Farmers, Look to Your Interests.

GRASS, CLOVER AND FIELD SEEDS

On hand, in lots to suit, at lowest market rates. Genuine Alfalfa California grown, Red and White Clover, Timothy Seed (Oregon and Eastern grown), Genuine Norway Oats. Also, choice varieties Seed Potatoes, Peas, Beans, Calabage, Onion and Melon Seeds. Address JOHN, C. DALY, No. 25 Front street, Sacramento. P. O. Box, No. 619. 16v2-3m

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Wheat—Algiers, Australian, Sonora, Club Chile, Oregon.
Oats—Norway, Oregon, Surprise, Coast, Wild.
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Buckwheat—Oregon, Chatfield, Humboldt Co.
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Potatoes—Early, of all kinds.

IN LOTS TO SUIT, BY

R. M. CHAMBERLIN & CO.,

N. E. Corner Clay and Davis streets, Produce Exchange Building, San Francisco.

Depot for the Pacific Oil Cake Meal. 19v2-3m

Garden Seeds.

I have on hand and will be constantly receiving an

Assortment of Garden Seeds,

To which I invite the attention of my customers and the public generally. Will also receive orders for

Trees, Plants, Shrubs, Etc.,

Grown at Oak Shade Nursery.....Davisville.

ARTHUR FLEMING,

Apothecary and Druggist, San Leandro, Cal. 22v2-3m

H. K. CUMMINGS, 1858. J. M. MAXWELL 1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have no interests that will conflict with those of the producer. 4v23-1y

SEED WHEAT.

WHITE TUSCAN,

Superior for Productiveness, Late Sowing, and Excellence for Flour-making.

Orders addressed to

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Ramie Roots for Sale,

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BY JOHN S. DRURY,

At C. F. RICHARDS & Co.'s Drug Store, S. W. corner of Clay and Sansome streets, San Francisco.

And by W. W. DRURY, at RAMIE NURSERY,

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10,000 Acres of Land,

Situating upon

GRAND ISLAND,

Twenty miles south of Sacramento,

FOR LEASE ON SHARES FOR ONE, TWO OR THREE YEARS.

The construction of the levee is now going ahead. This land CANNOT BE EXCELLED IN PRODUCTIONS. Shipments can be made from any portion of island by all classes of vessels.

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PROPRIETORS OF THE

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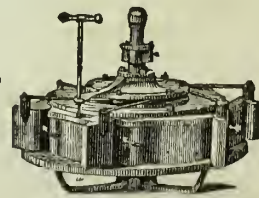
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Per cent. of Power guaranteed equal to any Overshot Wheel.

American Turbine Water Wheel,

MILL GEARING AND SHAFTING

Of all Descriptions, and General Mill Fitting.

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A. L. STOUT, W. M. MILLS, J. TEMPLE.

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22v23-3m-sa

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Are hereby notified that

THE STANDARD SOAP COMPANY

Continue to manufacture the following Standard Preparations:

Deterative, Prize Medal and Laundry Soaps;

Kane's Condensed Soaps;

Thomas' Cool Water Bleaching Soaps;

Standard and Eureka Washing Powders;

Madame Balcear's Washing Fluid and Liquid Bluing.

Adamantine Candles, and a general assortment of Family, Laundry, Fancy and Toilet Soaps.

Manufactory, 204 and 206 Sacramento street, San Francisco. 21v2-3m

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A NEW HUSBANDRY.

as it were, is required on the Pacific Coast, on account of its peculiar seasons, soil, climate and topography. The new discoveries, ideas, and useful hints evolved in its rapid progress, are to be observed with interest, and read, as reported in the **PACIFIC RURAL**, with profit by practical and progressive agriculturists everywhere. Sample copies of the **PRESS**, post paid, 10 cts. Subscription, \$4 a year.

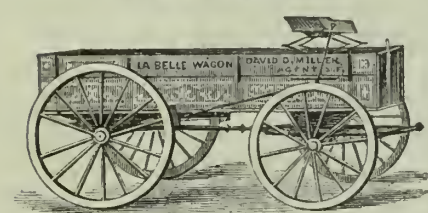
DEWEY & CO., Publishers,
No. 333 Montgomery St., San Francisco, Cal. Nov., 1871

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JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
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CELEBRATED LA BELLE WAGON,
Manufactured by **FARNSWORTH, WOODWARD & CO.,**
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All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate. Sold at from \$90 to \$125. Can be had only at

DAVID D. MILLER'S,
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Also on hand all kinds of Imported Wagons from the Eastern States, including Thorough-brace or Mountain Wagons, C Spring and Side Spring Buggies—in fact all kinds for the city and interior trade. Country orders promptly filled and warranted to give satisfaction, and at as low rates as though present in person. 7v3-1f

HOP ROOTS FOR SALE.

I have a lot of Choice Hop Roots for sale at Lowest Rates. The suckers, instead of being cut off from the stock, were covered with earth, thus promoting the growth of the "laterals," which are used for planting. I can also furnish healthy Lewiston Blackberry Plants at \$3 per thousand. Orders may be addressed through **DEWEY & CO.**, of the "Rural Press;" **DRAKE & EMERSON**, 521 Sansome st., San Francisco; **W. R. STRONG**, 8 and 10 J st., Sacramento; or direct to me, 25v2-3m-16p **CALVERT T. BIRD**, San Jose, Cal.

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England.
Also ten Rams, and thirteen Ewes and Lambs, Shetland Sheep.
Also five hundred Calves of the best milk stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July.
ROBT BECK, Secretary
State Agricultural Society, Sacramento.

BLAKE'S PATENT STEAM PUMPS.

WHAT IS SAID BY THOSE WHO USE THEM.

SALEM, Oregon, January 16th, 1872.
MESSERS. BERRY & PLACE, San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump, our company purchased of you, we would say in all sincerity that the pump has exceeded our expectation. It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is SIMPLE, DURABLE, and PERFECT in its construction. We have found it entirely satisfactory and just the pump in every respect needed for our work.
Yours, respectfully, **W. F. BOOTHBY**, Pres't Salem Water Works.

PHOENIX MINE, Napa County, January 10th, 1872.
MESSERS. BERRY & PLACE, San Francisco—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump throws it all out of the main shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute. It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our company, as a reference, you are at liberty to do so. Very resptly, **GEO. FELLOWS**, Supt. Phoenix Quicksilver M. Co.

OFFICE STARR MILLS, VALLEJO, Cal., January 13th, 1872.
MESSERS. BERRY & PLACE, San Francisco—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommendations. Yours, Etc., **STARR BROS. & CAMPBELL.**

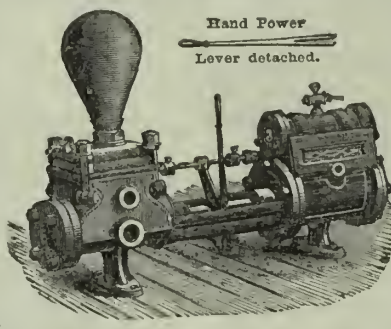
OFFICE S. J. WOOLEN CO., SAN JOSE, January 29th, 1872.
MESSERS. BERRY & PLACE, San Francisco—Gentlemen: We have used a No. 6 Blake Steam Pump now for about two years, both as a Tank Pump and as a Fire Pump in case of need: and it has given excellent satisfaction. It suits us in every respect. Very respect fully, **R. F. PECKHAM**, Pres't San Jose Woolen Co.

BELMONT, Cal., February 6th, 1872.
MESSERS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of Berry & Place, by Mr. Ralston, I will say, that it gives ENTIRE satisfaction, even working as it now is, where no other Pump could; for it is at present six feet under water, yet it does its work PERFECTLY.
Yours, Etc., **J. E. BUTLER**, Supt. Water Works and Engineer at W. C. Ralston's.

BLAKE'S PATENT STEAM PUMP.

These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for nearly three years, and we are willing every one in use may be referred to: every Pump will speak for itself. They are constructed in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows:

It is positive under any pressure. May be run slow or fast as may be desired. Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility having no rods, nor complex rod arrangements to get out of order. Will start at any point of the stroke, and will discharge all the water of condensation. The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having no leaky joints, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand work whatever. The Blake Pump is extensively used on Railroads and Steamboats, in Hotels, for Mechanics' Institute, San Francisco, and State Fair at Sacramento, as being the best steam Pump on exhibition. The agents have recently imported several of the largest-sized Mining Pumps for water works, and deep mines, and will be pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by **TREADWELL & CO.**, Machinery Depot, old stand, corner of Market and Fremont streets, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.



It has no Cams or Rotary Complex Valves. It has stood the test wherever tested.

IT IS SIMPLE, COMPACT, DURABLE, AND POWERFUL.

Manufactured by **Geo. F. Blake & Co.**, Boston, who build and have on hand a larger variety of Steam Pumps than any other concern in the country, embracing forty different sizes, and capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to every description of work required. Send for circular and prices.

The largest stock in the country at the Machinery Warehouse of

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Machinery Depot for Miners, Millmen, and Engineers' Supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics', Miners' and Farmers' Tools; Sturtevant's Blowers, Turbine Waterwheels, Etc., Etc. 6v24-cowbp

Fine Imported Poultry,

CONSISTING OF
Dark Brahmas,
LIGHT Brahmas,
BUFF COCHIN,
PARTHIDGE COCHIN
AND
Houdans,



Guaranteed Pure, and bred direct from the finest Imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda County, Cal. Address **W. FORD THOMAS**, Custom House, SAN FRANCISCO.

Farms for Nothing in Montana Territory.

Send \$2 (greenback) to **H. N. MAGUIRE**, Bozeman City, Montana, and get full particulars about the

Lands and General Business Prospects

On the line of the N. P. R. R. Special questions carefully answered, and investments made for non-residents. References, Editors **RURAL PRESS**. 8v3-3m

FOR SALE.

ONE HUNDRED AND EIGHTY-ONE ACRES OF LAND In Antelope Valley, Colusa County

Good Grain or Grass Land. Wood, Water, and good House, with five rooms; shed for horses, Government title—all for five dollars per acre.

Enquire of **DENTER WITTER**, 1610-1m Upper Lake, Lake county, Cal.

CASHMERE GOATS.

All persons interested in the Cashmere or Angora Goat enterprise are requested to meet in Sacramento on Wednesday, February 23, 1872. **N. GILMORE.**

SPANISH MERINOS—We offer for sale low, about 100 of our fine Thoroughbreds. Send for Catalogue. Orders solicited. (24-22) **JOHN SHELTON & SON**, Moscow, N. Y.

EGGS FOR HATCHING

FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums
At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
DARK BRAHMAS, Imported from England and Ireland;
HOUDANS, direct from France;
LA FLECHE, direct from France;
SILVER SPANISH HAMBURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
WHITE COCHINS,
BUFF COCHINS,
DUCK WINGED BANTAMS,
GOLDEN SEARIGHT BANTAMS,
JAPANESE BANTAMS,
HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffe-Necked, Black-Tailed Turbitts, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to **THOS. E. FINLEY**, Manager,
California Stock and Poultry Association.

OFFICE—No. 11 Leidesdorff street.

YARDS—Cor. Laguna and Washington streets.

Light Brahmas.

FIVE PAIR, bred from the Celebrated Jackson Cock.

\$20 per Pair. Seven Months Old.

THOS. E. FINLEY,

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Cattle, Sheep, Swine, Poultry.

Original Breeders of **CHESTER WHITE PIGS**. Send stamp for Catalogue. **JAS. STEWART & CO.**, Kennet, Chester county, Pa. 4v3-2m

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER.

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

6v2-1y-16p

GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry, Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

GEO. B. BAYLEY,

Importer and Breeder of

CHOICE POULTRY.

P. O. Box 669, San Francisco.



TREES FOR SILK!

Multicaulis,

1 year old, \$20 per Thousand.

Do. 2, 3 and 4 years, \$25, \$35 and \$40.

ALBA AND MORETTO, 2, 3 and 4 years, \$40, \$50, \$60

CUTTINGS of all kinds \$2.50 per thousand.

TREES FOR SHADE!

Finest and Cheapest in the State.

White and Black Mulberry

From 1½ to 3 inches diameter, and 15 to 20 feet high—from \$25 to \$30 a hundred, or 30 to 50 cents each.

FRUITING MULBERRY!

From 50 cents to \$1.50 each.

Silkworm Eggs and Silk Manual.

Liberal discount to the trade.

I. N. HOAG,

26v2-3m-16p

Sacramento, Cal.

N. GILMORE,

Importer and Breeder of

Angora or Cashmere GOATS

—OF—

PURE BLOOD

ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

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El Dorado, El Dorado county, California.

5v3-1f

McDOUGALL & MARQUIS,

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No. 328 Montgomery Street,

SAN FRANCISCO, CAL.

1v3-3m

NORWAY Genuine Norway OATS! Oats, raised on hill land, by one of the proprietors of this journal, can be had at this office.



Volume III.]

SAN FRANCISCO, SATURDAY, FEBRUARY 24, 1872.

[Number 8.]

Prize Buff Cochins.

The beautiful engraving which we herewith present represents a trio of Buff Cochins, imported by Mr. Geo. B. Bayley, of Oakland, and from which he is breeding the present season. They are probably not excelled by any in the country, and cost in the East \$125 in gold. They won the first prize at the New York State Poultry Exhibition in 1871. The cock weighs 17 pounds, the hens 12 pounds each, and a brood of young chicks hatched from their eggs last March average nine pounds each, and bid fair to fully equal if not excel their progenitors.

Mr. Bayley finds the Buff Cochins the best fowls for winter layers, the most careful of their young and the hardest to be found in the

anticipation of an increased demand this spring he has prepared for it by raising some fifty trios, which we saw ranging about, of all ages, from the young brood of a week to the gawky undeveloped bird of five months. To those admiring a beautiful fowl and also a thoroughly useful one, we can recommend, as among the best to be found, the offspring of the fowls shown above.

Hot Water as an Insect Extirpator.

Do our hot-house plant growers know that hot water is one of the best insect extirpators known to the profession? If they do, then they ought to say to those who almost monthly purchase their rare and beautiful roses and

degree of heat that certain plants will bear without injury, and though many were found capable of withstanding a heat much greater than 120 degs., yet this was found amply sufficient for the almost instant destruction of all the shrub infecting insects.

All the fuchsias will bear unharmed 140 degs. Pelargoniums will stand 150 degs. Ferns, heliotropes, petunias, mignonette and many other plants of soft texture will bear 140 degs., but anything over this injures them; but as 120 degs. Fah. is enough for all the ordinary insect tribe, infesting our house plants, we can be safe in applying it. Take a vessel large enough to fully immerse the plant, fill it nearly with hot water, and then with thermometer in hand—which will cost but a few dimes—pour in boil-

How Breeding Affects the Quality of Wool.

Though food and climate with judicious management has very much to do with determining the quality and quantity of our wools, yet no one can deny but that the breed is an important agency in producing the desired results.

Proper feeding and suitable climate will do much to favor the growth of good wool, but it cannot do all. If we would have wool of a certain quality and weight of fleece, we must begin by obtaining the proper breed to produce it. No method of management, no climate, can give us Saxony, Merino or South Down wool from the common Mexican sheep, without



A TRIO OF PRIZE BUFF COCHINS.

feathered tribe, with the single exception of the Partridge Cochins, which closely resemble them. During the late severe rainstorms his Cochins rarely missed a day in laying, and proved themselves justly entitled to the head of the list as winter layers. The chicks are very hardy, but fledge late, and for two months present an almost naked appearance. They however, at five and six months, rapidly gain in weight and will dress at that age six and seven pounds for market.

The hens, after laying some 25 or 30 eggs, become broody, but are very easily broken of their inclination to sit, by confinement in a small yard with no houses or nests about—three days is generally sufficient, and in ten days they will commence laying again.

In addition to the trio here presented, Mr. Bayley has three different strains of the Buffs, and is prepared at all times to furnish birds, not related for the purpose of breeding. The demand has been very great for the Buffs, and in

other plants—now if this or that plant or shrub which I sell you should become covered with aphids or plant louse, "scale" or red spider, don't throw it away or cover it over with snuff, sulphur or any other vile drug or compound, but apply at once the hot water remedy. The salesman must be ignorant of this, the best of remedies, or he is afraid that if he let the fact of its merit be known, it will lessen the amount of his sales.

The facts are these, that vigorous growth and full health are generally sufficient to preserve plants from the attacks of the enemy, but not always; sometimes all the care that we can bestow will not prevent their appearance and numberless increase; when this occurs and the plant is covered with the little pests, by simply inverting the pot, holding it and the earth from falling, with both hands under it, dip the whole top of the plant into water heated to 120 degs. Fah. and every aphide will quickly perish. Repeated experiments have proven the

ing water till the temperature rises to 120 degs., then immerse the whole plant for one or two minutes, which is enough to destroy every insect on leaf and branch. We know that this simple method of removing vermin from plants is of easy adoption and certain in its results, and without injury to the plants.

THE CATTLE DISEASE.—We would especially call the attention of stock-growers to the report of Dr. C. L. Anderson on the disease of cattle in the vicinity of Santa Cruz, which appeared in last week's Press, under the head of Santa Cruz Farmers' Club. We are desirous of learning whether the disease has made its appearance in any other part of the Pacific coast. If it has anywhere been noticed, please communicate facts to RURAL PRESS.

IRRIGATION.—An article of special interest under this head on page 114, is by Dr. Holden, Mayor of Stockton.

a long series of years devoted to their improvement; as we cannot wait for this, it is important to start out with the already best improved breeds. The value of long-continued and careful breeding is forcibly shown both in the quality of the wool and form of body. Hence it is better to select from those flocks that for successive generations have sustained a character for the qualities desired.

In looking for rams it is better to select from those flocks which have an established reputation, than to take up with those, that though possessing symmetry of form and quality of wool, yet cannot show where or how they came by it. Sheep often have all the external qualifications desired so far as the eye can judge, but if the flock has not been carefully bred, the buyer may be disappointed in his purchase. The value of good wool over poor, though it costs no more to produce it, is so great that any effort by which the farmer can make its growth abundant, and of a quality to meet the requirements of the market, will always or should command the attention of every practical wool grower.

HORTICULTURAL.

Tropical Trees.

[Written for the Press.]

For nearly the fourth of a century, California has been in uninterrupted semi-monthly intercourse with the Central American States, and it is really surprising that during that long period, our horticulturists have as yet made no practical efforts towards transplanting and cultivating the ornamental and fruit-bearing plants and trees of that prolific region. Here and there, in some private conservatory, may be seen a few stunted specimens of tropical exotics, kept merely as botanical curiosities; but as to rearing orchards and groves of Central American trees, the experiment, so far as we know, has never been attempted.

The Gum Tree.

At present, our gardeners have caught the "Australian gum fever." This is a laudable movement in the right direction; but recent occurrences have shown that, although the Eucalyptus family are graceful trees and rapid growers, they cannot stand up against the northwest trade winds, which annually sweep over this latitude. The roots of the Gum tree are very feeble, fan-shaped affairs, which do not strike deep enough into the soil to sustain the lofty trunk and heavy burthen of leaves.

The Mango.

The superb Mango-apple tree of Central America, one of the most elegant fruit-bearing ornamental trees on the globe, is not open to the danger of being uprooted by the winds. It is a sturdy grower, and although it sometimes attains to the height of 50 feet, it is rarely prostrated even by tropical tornadoes. The foliage of the Mango is heavy and of a glossy, deep-green tint. The general contour of the tree is not unlike Eucalyptus, and when in full bearing, its luscious clusters of golden fruit render it the most gorgeous ornamental tree in the world. The wood of the mango is as close-grained and heavy as that of the apple tree, and there is every reason to believe that it will flourish and bear wherever the orange and fig can be raised in this State.

The Madeira Negra.

Another hardy, rapid grower of the tropics is the "Madeira Negra," or "Mother of Cacao," as it is called by the natives. The Madeira is invariably planted simultaneously with the Cacao, or chocolate tree for the purpose of sheltering and protecting the latter from winds and sun. A chocolate orchard without such protection, would be of little value, for the trees will not bear well when exposed to storms and torrid sunlight. As stated, the Madeira is a rapid grower and in general appearance greatly resembles the Red Elm of the United States. The wood of this tree is almost as hard and heavy as *Lignum Vitae* and is as everlasting as Irish bog oak. There are Madeira Negra posts now standing at the street-corners of Central American cities, which were placed there by the Spanish conquerors, three centuries ago, which are as sound as when they were planted.

The Chocolate Tree.

There is no good reason why the chocolate tree itself might not be successfully cultivated in our southern valleys. The bush rarely grows higher than 12 or 15 feet; is tough and elastic and looks not unlike the American Pecan tree.

Of fruit-bearing plants and trees of that country, which will certainly thrive wherever the orange and olive will flourish, there are many notable varieties, amongst which we may venture to name the Zapota, Morañon, Aquacarte, Papalle, Guava, and many others whose names we cannot remember. Not being much of a botanist, the writer of this is at fault in tropical nomenclature; but he can freely say from personal observation that the forests and jungles abound with wild fruits of exquisite flavor, while on every hand are to be seen an endless variety of the most beautiful trees and shrubs, many of which would doubtless thrive and flourish in our semi-tropical climate.

If some enterprising citizens who are blest with ample means and have the good of the State at heart, will take it in hand, they cannot accomplish a more laudable purpose, or one fraught with more lucrative pecuniary possibilities than to import and cultivate upon an extensive scale, some of the rare trees and delicious fruits of Central America.

QUERCUS VIRENS.

Irrigation.

Irrigation is the fountain of real wealth, the promoter of industry and the fosterer of flourishing population. History furnishes thousands of instances of the immense wealth derived from irrigation in all countries for long ages past. Some of the most costly and stupendous works which the genius and skill of man have called into existence have been constructed for the purpose of artificial irrigation. In the old world hundreds of millions have been expended in building canals, aqueducts, reservoirs, and fountains for irrigation.

The art of producing large crops by means of artificial supplies of water, has been practiced from remote ages. It was used by the Aborigines of America, by the Incas, the inhabitants of Mexico, in Chili, Peru, and other South American republics, extensively practiced by the Egyptians, and Romans, on the borders of the Mediterranean, and, at the present, in France, Germany, Spain, and all warm countries. The Hindoos make no attempt at cultivation without artificial irrigation. The Chinese and Japanese have been celebrated for many centuries past for their superior plans of irrigation. The subject is one of immense importance to Californians, as well as an important art of itself, and one that requires special study for its adaptation.

Climatic Effects.

In California we have long seasons of drouth and in those seasons we have millions of acres of land untitled, because the heavens withhold from us the refreshing rains. The winter of our vegetation is in midsummer. In that season when we have been accustomed to see the earth clothed with rich verdure and blooming with flowers, we behold our hills and plains presenting a gloomy and forbidding aspect. Nothing more is wanting to make them put on the gorgeous livery of perpetual spring, than water. The want of it for agricultural and horticultural purposes is the greatest disadvantage California labors under. As the Almighty has wisely ordained all things, He has willed that California should have a short season of rain, and a long season of drouth; therefore we must render art subservient to the necessities of our situation, and do as has been done since the infancy of the world to this day, and other lands similarly situated, irrigate our lands. Three consecutive years of drouth in this state have at last affected that sensitive point of man, his pocket, and without regard to his calling or profession, has prompted him to tax his brain for an alleviative—one that will at all times be available to produce that which gives to communities their life, wealth and prosperity, and the one above all others and the only one that California needs to insure regular annual crops in variety—an adequate system of irrigation.

As a Fertilizer.

It is an acknowledged fact that water is the great desideratum and the only fertilizer our State at present needs. With few exceptions our valley lands are composed of deep rich soils—in some sections sandy loam, in others black clay or adobe, in others, particularly the river bottoms and mountain valleys, alluvium. All sections of the State and all varieties of soil need more or less water during the seven or eight months of cloudless sky. With this essential element to successful cultivation every variety of vegetation is wonderfully increased both in growth and product. From two to three crops of many varieties of fruits and vegetables are easily produced annually by this means. In fact, by irrigation vegetables can be planted and a profitable crop raised every month in the year. Irrigation, the world over, diffuses fertility, beauty of verdure and profit, a fact known and practiced, as indispensable to the interests of agriculturists and horticulturists by all Eastern nations, from time immemorial. Can California then afford in view of our long season of drouth, to longer procrastinate so important a work as the perfection of a system which is deemed as a necessity regardless of time or cost in all sections of the world similarly situated? Would California secure at once population and wealth she must take the advantage of her surroundings and by proper appliances convey the mountain waters over the thirsty earth.

California cannot afford to be idle three years out of seven. It is not the farmer

and fruit grower and stock raiser alone, but also the manufacturer, for the lack of the raw material, commerce too, for freight to foreign marts, in short the whole community suffers by the universal stagnation of trade and traffic.

Sources of Supply.

It may not be a waste of time to devote a moment to the consideration of that which stimulates business, produces the wealth of all countries, and is the foundation of commerce, manufactures and prosperity of all communities, the products of the soil. All understand and admit the great productive capability of the soil of our valley lands, whether it be the lesser valleys in the mountains, or the greater ones—the San Joaquin and Sacramento; but their vast latent resources can only be developed under an adequate system of irrigation, and this leads to the consideration of the equally important and well known fact that from Chico north to Tulare south, about 500 miles, and from the foothills of the Sierra Nevada mountains, east, to tide water on the principal rivers, the Sacramento and the San Joaquin, westwardly, the fall is from 8 to 12 feet to the mile, amply sufficient to give the necessary impetus to waters flowing in these directions, and which comprise a territory of some 400 miles in length, by from 40 to 50 in width. Now as the Sierras always receive an abundance of rain and snow, during the rainy season, replenishing to repletion the out flowing streams, particularly during the spring months by the melting of snow, the immense supply of water flowing from a varying altitude of from 1,000 to 10,000 feet can be easily and cheaply saved by means of reservoirs and dams in the foothills in sufficient quantity for irrigating purposes, from whence by a well ordered system of canals and ditches it can be spread over a vast region as needed, producing millions of wealth annually. It would be a useless expenditure of time to go into a detailed history of the State in matters of agriculture and horticulture for the last 20 years; they attest the fact that millions of acres are rendered productive only in wet seasons, and that water, is the one great necessity to the profitable rearing of the labor of the husbandman. The vital question therefore is, how are we to realize it seasonably, plentifully and at reasonable rates? The answer is, let Californians do as others have done in similar climates for centuries past.

What Must be Done?

Do as Italy, Spain, Portugal, Asia, Egypt, and on our own continent, Mexico and other Southern Republics do, irrigate lands. Provide for the future by investing liberally in safe and sure enterprises and not for the day, as Californians are wont to do, in wildcat stock jobbing. Build canals and ditches for irrigation, cause the mountain waters to be spread over our millions of fertile acres, thus producing sure annual crops, not only for home consumption but an immense surplus for exportation to furnish in some degree the marts of the world, and in return enrich ourselves and the State, by giving the cultivator of the soil, the stock-raiser, and capitalist a sure opportunity for safe and profitable investment.

But before going into the history of irrigation as conducted in past ages in Eastern countries, and in Mexico, Peru and Chili and other locations, let us look for a moment at the vast area of land in California, that could be cultivated under a thorough and comprehensive system of irrigation, according to the U. S. survey and estimates.

Area to be Irrigated.

California contains 188,981 square miles, or 120,947,840 acres, of which 30,408,426 acres have been surveyed, and of this, 16,409,422 acres have been disposed of by the Federal Government before the first of July, 1868, the latest data at hand. For school and educational purposes, 6,765,404 acres have been granted for internal improvements; 8,150,000 for railroads; 6,400 for public buildings; 1,198,874 acres have been sold, and 368,321 have been taken under the Homestead Act; 470,452 under military warrants; 580,572 under "scrip;" 343,169 under swamp locations; 28,129 under Indian scrip. Since June, 1868, 2,000,000 acres have been disposed of and 86,000,000 acres of public land in the State are open to occupation. There are 50,000 square miles in the Coast valley and mountains, 50,000 in the Sierra Nevada, 30,000 in the low lands of the Sacramento Basin, 2,000 in the Klamath Basin, 12,500 in the Coast Range or 76,500 square miles or 60,800,000 acres as available tillage, more than one-half of which belongs to Government.

The area valued for pasturage but unfit

for tillage is half as great. Of the number of acres enclosed, 4,200,000—or about one in sixteen of that suitable for tillage—only 2,000,000 of acres or one in thirty-two are tilled. The Central Pacific Railroad Company have granted them 1,394,000 acres. The Western Pacific Railroad Company about 500,000. The Stockton and Copperopolis Railroad Company 256,000. The Southern Pacific Railroad Company claim 6,000,000; total as railroad land donations, 8,150,000 acres. The peculiar topography of the State, warrants the statement that without great expense, more than two-thirds of these tillable lands can be irrigated by a proper system of ditches, dykes and reservoirs, distributing at all seasons the immense bodies of water that annually accumulate in the mountains.

In regard to the great San Joaquin and Tulare Valleys, extending from Stockton to Fort Tejon 300 miles, by an average width of 50 miles embracing 12 counties, and containing over 18,000,000 acres of land, a territory larger than all the New England States save New Hampshire. Over 6,000,000 acres in these valleys are superior for cultivation, producing, as has been well tested all the varieties of northern and semi-tropical fruits. These 6,000,000 acres do not embrace the hundreds of little valleys in the mountains and foothills, now well known to be perfectly adapted to grain and forest culture, particularly the grape in most of its varieties. These valley lands have been but little thought of for cultivation until 1868.

Outside of a distance of 30 miles east and south of Stockton since 1868, more land has been entered in the Land Office in Stockton, than in all previous years. The lands in the valleys bordering on the Stanislaus, Tuolumne, Merced, Mariposa, Owens, Fresno and Chowchilla rivers, are exceedingly rich in soil, being a sandy loam and alluvium, enriched for ages by the accumulation of decomposed vegetable matter and mineral washings from the mountains and hill sides. Also similar lands bordering on Kings, White and Tulare rivers, and scores of smaller streams, which like the larger ones, meander through the land from the base of the Sierra Nevada mountains, and empty their waters into the San Joaquin river and Tulare Lake, at a distance of from 25 to 40 miles from the mountains. The source of these scores of rivers and streams is in the Sierra Nevada mountains, and they have a fall between the foothills and the San Joaquin river and Tulare Lake of from 10 to 15 feet per mile, thus affording ample fall to water, that may be carried by ditches, etc., to irrigate all this vast and fertile region.

The Necessity of Water.

As an instance showing the stern necessity of a supply of water in these valleys, to insure a profitable crop in all seasons. I will say that in 1867 the lands south of Stockton for 30 miles were considered valuable excepting the choice parcels on the river bottoms, and were sold by the tens of thousand of acres at from 65 cents to \$1.25 per acre. In 1868 the season was a wet one, and large crops of grain all over the State were produced. In the Paradise country (Stanislaus county) between the Stanislaus and Tuolumne rivers, previous to this season (1868) it being a sandy loam soil, was considered a worthless wide waste. This section consisting of about 400,000 acres was principally put into grain, the soil being easily and cheaply cultivated; farmers produced in a few months over 1,000,000 bushels of wheat. Stimulated by so cheaply produced and profitable crop in 1869 and 1870 this land was again cultivated to grain, but a dry season followed, sad disappointment and bankruptcy succeeded and hundreds of farmers were ruined.

Consider for a moment what would have been the result of these two years, had there been an adequate system of irrigation in force. The experience of ages and in all countries answer, sure and profitable crops by irrigation. It is only a question of time, (and it should be a very short time) until these vast plains and valleys, these millions of fertile acres, rich and deep in soil, will, with artificial irrigation yearly produce immense crops of the cereals, vegetables and fruits, and the sooner our farmers, horticulturists and stock-raisers are convinced of this, and will invest in aid thereof, the sooner they will be abundantly rewarded. The short-sighted idea of Californians (though called by themselves extremely smart) not to aid internal improvements, and to live only for the day and for themselves, will sooner or later impoverish them, and result in their being supplanted by those from abroad, who will both comprehend and master the situation.

[Concluded next week.]

MECHANICAL PROGRESS.

Mechanical and Engineering Progress.

The past year has been especially distinguished for advances in mechanical and civil engineering. Among the inventions which deserve special mention, none perhaps rank higher in importance, simplicity, and novelty than the use of the "sand blast" for cutting hard substances. New applications of electricity to regulating large, and actuating small machines have been made. The inventive genius of the country has also been largely exercised in the problem of canal-boat propulsion, stimulated by the offer of a large reward by the New York Legislature. The increased use of artificial stone for various purposes of building and ornament, is also a notable event of the year.

In civil engineering many important works already commenced have been making improved progress, and new projects have been seriously proposed, the accomplishment of which would scarcely have been entertained a few years ago. The mode of attack upon the obstructions to navigation at Hell Gate, near New York, has been entirely changed since the successful operation of Von Schmidt in this harbor, and the most confident anticipations are entertained of complete success in the tunnel operations now in progress there.

The inauguration of the Mt. Cenis Tunnel, which took place in September last, forms an important era in engineering progress, and has brought about a more favorable consideration of the similar work now in progress in the Hoosac Mountains in Western Massachusetts.

The bridges over East river at New York, and the Mississippi, at St. Louis, are justly regarded as among the most important engineering projects, now in process of completion. Both are making most satisfactory progress, and each presents novel and interesting features in civil engineering.

Our own State has already become widely and most favorably known for the novelty and boldness of its engineering projects, both completed and in contemplation; and the genius and success of California inventors is no less noted and marked, than are the efforts of her engineers in their peculiar and more conspicuous field.

Notwithstanding the wonderful progress of the few years last passed, the field of mechanical progress seems even more inviting than ever, in wants and possibilities, while the activity of the year just closed gives good ground for the confident anticipation that the one upon which we have just entered will not fall behind any of its predecessors in important results.

A KNOT TYING MACHINE—Mr A. Perry, of Perth Amboy, New Jersey, has patented a device, which ties a square knot precisely like that made by hand. Those who have had any experience with self-binding mowing machines will at once understand the value of this invention, which, so far as we know, is the only one which accomplishes the feat. It will tie the strings around the sheaves as they are made by the reaping machine, and thus enable the farmer to dispense with the expense of one man and relieve the team of his weight. The nearest approach previously made to accomplishing tying by machinery consisted, we believe, in twisting the ends of the string or wire together or tucking them under the band. A reaping machine may now be made to deliver sheaves tied up, which will require as little attention as the mowing-machine—all the work being performed by the machine itself.—*Manufacturer and Builder.*

PHOSPHORUS BRONZE—A NEW METAL FOR DRILLING TOOLS.—A lengthened and exhaustive series of experiments with a new alloy called phosphorus bronze, which is formed by a combination of phosphorus with different proportions of tin and copper, have proved that it is admirably adapted to resisting the concussion and strain incident to heavy ordnance, and also to the manufacture of machinery subjected to excessive strain or violent shocks. Among the numerous purposes to which it may be applied is that of drilling tools. The alloy may also be tempered so as to resist the action of the file. It is claimed to possess elasticity, hardness, tenacity, and durability, far superior to that of the best steel.

Bridge Building.

In no branch of engineering has more progress been made, within the last fifty years, than in bridge building. Bridges are one of the necessities of civilization, and so important were they considered in the "middle ages" that a religious society was founded in the south of Europe, called "The Brethren of the Bridge," the object of which was to promote intercommunication by constructing bridges over large streams, and establishing ferries where bridges were impracticable. The famous bridge at Avegnon, in France, which was 12 years in building, was constructed under the direction of this institution, about the year 1180. The bridge of Lyons which rested on 20 arches, was also built by them, and in fact nearly all the principal bridges of Europe for several hundred years.

The earliest bridge of note, mentioned in history, was that built by Queen Nitocris over the Euphrates at Babylon. Its length was about 3,500 feet. It was built upon piers—the arch being then unknown. From that time to the present, bridge building has been considered one of the most important arts, and successful constructors have ever been especially honored.

The most wonderful among modern bridges, already completed or now in progress, may be alluded to as follows: The bridge now in process of erection across the Mississippi at St. Louis, which is one of the wonders of the age, is to be a tubular, cast steel, arch bridge, supported by the abutment and two piers, the latter 515 feet apart, and 499 ft. each from its nearest abutment, making three spans of about 500 feet each. Its greatest span is the same as that of the Kullenberg bridge over the Leek, an arm of the Rhine, in Holland.

Telford's suspension bridge across the Menai Straits has a span of 570 feet.

The Victoria tubular iron bridge of Montreal exceeds this greatly in length, being 5,600 feet (1¼ miles), but it rests upon twenty-four piers, and its spans are mainly only 275 feet.

The suspension bridge at Niagara spans 821 feet, and is 245 feet above the water.

The East River bridge will span 1,600 feet, at a height midway of 130 feet.

The peculiarly isolated position of San Francisco, must at no very remote period, call imperatively for the construction of a bridge, which will rank among the most wonderful structures of the kind in the world. A bridge across the flats to Alameda, presents no engineering difficulties; but although such a structure will become a matter of necessity, at no very distant day it will come far short of meeting the wants of the future metropolis of the Pacific. The individual is or soon will be born who will be called upon to construct a track for the locomotive across the Golden Gate, and high above the masts of the tallest ship, to form a pathway for the immense commerce which will ere long be seeking this city from the immense region of country between here and Alaska.

NOVEL METHOD OF WARMING RAILWAY CARS.—The introduction of a new method for warming railway cars on some of the French and German lines, has been attended with gratifying success. A preparation of wood charcoal, nitrate of potash and starch is employed. At first the charcoal was burnt in perforated boxes two feet long, four and one-half inches wide, and two and three-fourths inches deep. It was soon found, however, that this combustion caused violent headaches, and the charcoal was, therefore, put into close iron boxes placed under the seats, a double top being employed to prevent the seats of the cars from becoming too warm. The prepared charcoal is placed in the boxes in pieces four inches long, three inches wide, and two inches thick. On the line between Aix-la-Chapelle and Berlin, eight pieces of charcoal were used for heating a compartment. This quantity sufficiently warmed the car during sixteen hours, and at the end of the journey the fuel was still red hot. This prepared charcoal costs thirty-two shillings per hundred, and the expense of heating one compartment is said to be much less than that required by any of the ordinary methods employed, being less than a penny an hour.

HEAVY HYDRAULIC MACHINERY.—At the Empire Foundry, in Marysville, they are manufacturing some hydraulic machinery that will stand a pressure of 504 feet fall. The *Appeal* remarks that this is the heaviest pressure for which machinery was ever made.

SCIENTIFIC PROGRESS.

Facts with Regard to Storms.

A vast amount of information is constantly being gathered and collated by the U. S. Signal Service, out of which is being gradually built up the true science of that class of meteorological phenomena. Among the general observations thus far noted, may be mentioned the following:—

Storms are accompanied with a depression of the barometer near the central line of the storm, and a rise of the barometer in the front and rear.

This central line of minimum pressure is generally of a great length from north to south, and moves side foremost toward the east.

This line is sometimes nearly straight, but generally curved, and most frequently with its convex side toward the east.

The velocity of this line is such that it travels from the Mississippi to the Connecticut river in about twenty-four hours, and from the Connecticut to St. John, Newfoundland, in nearly the same time, or about thirty-six miles an hour.

When the barometer falls suddenly in the western part of New England, it rises at the same time in the valley of the Mississippi, and also at St. John, Newfoundland.

In great storms the wind for several hundred miles on both sides of the line of minimum pressure blows toward that line directly or obliquely.

The force of the wind is in proportion to the suddenness and greatness of the depression of the barometer.

In all great and sudden depressions of the barometer there is much rain or snow; and in all sudden great rains or snows there is a great depression of the barometer near the center of the storm, and rise beyond its borders.

Many storms are of great and unknown length from north to south, reaching beyond our observers on the Gulf of Mexico and on the northern lakes, while their east and west diameter is comparatively small. The storms therefore move side foremost.

Most storms commence in the "far west," beyond our most western observers, but some commence in the United States.

When a storm commences in the United States the line of minimum pressure does not come from the "far west," but commences with the storm, and travels with it toward the eastward.

There is generally a lull of wind at the line of minimum pressure, and sometimes a calm.

When this line of minimum pressure passes an observer toward the east, the wind generally soon changes to the west, and the barometer begins to rise.

There is generally but little wind near the line of maximum pressure, and on each side of that line the winds are irregular, but tend outward from that line.

The fluctuations of the barometer are generally greater in the northern than in the southern parts of the United States.

The fluctuations of the barometer are generally greater in the eastern than in the western part of the United States.

In the northern parts of the United States the wind generally in great storms sets in from the north of east and terminates from the north of west.

In the southern parts of the United States the wind generally sets in from the south of east and terminates from the south of west.

During the passage of storms the wind generally changes from the eastward to the westward by the south, especially in the southern parts of the United States.

The northern part of the storm generally travels more rapidly toward the east than the southern part.

During the high barometer of the day preceding the storm it is generally clear and mild in temperature, especially if very cold.

The temperature generally falls suddenly on the passage of the center of great storms, so that sometimes, when a storm is in the middle of the United States, the lowest temperature of the month will be in the west on the same day that the highest temperature is in the east.

The first of the principles upon which the Signal Corps proceeds is that the inviolable course of air currents is such as will equalize the atmospheric pressure upon the earth's surface, and that wherever inequalities exist, the winds are set in motion, the air thus finding its level, just as water or any other visible fluid does.

A Volcano in Miniature.

Dr. F. V. Hochstetter furnishes an interesting account of a phenomenon occurring during one of the phases of a manufacturing operation, which is, he says, a complete duplicate, upon a miniature scale, of a volcanic eruption, and which serves at the same time to confirm the modern views concerning the process of an eruption; according to which the lava is not simply in a molten condition, but is reduced to the state of liquidity by the action of the superheated water-vapor under great pressure.

The phenomenon referred to occurs in the operation of separating the sulphur from the residual products obtained in the manufacture of soda by Leblanc's process. The sulphur obtained from these residues, in order to free it from the gypsum, or sulphate of lime mixed with it, is melted in a suitable apparatus, with steam under a pressure of from 2 to 3 atmospheres. The gypsum remains suspended in the water, and the fused sulphur is from time to time run off into wooden troughs, the temperature of the fluid mass being about 251-6° F. Almost instantly after the pouring a crust of solid sulphur is formed on the surface of the mass. Dotted over this surface, however, orifices are left, from which the liquid beneath is forced up. At intervals a jet of sulphur bubbles out, and cooling, forms around the orifice a slight prominence; the repeated eruptions accumulate material about it, until a miniature volcanic cone is formed, with its crater well defined.

The cause of this curious phenomenon is found in the fact that the sulphur, in its fused condition in the steam-chamber, takes up and retains a certain quantity of water, which, as the sulphur solidifies, is given out gradually in the form of steam, accumulating pressure beneath the crust, and forces, at regular intervals, an outlet at the vents, carrying with it in its passage the molten sulphur to form the solid cone.—*Neues Jahrbuch für Mineralogie.*

Height and Velocity of Meteors.

A table showing the height of sixteen shooting stars doubly observed in England, during the meteoric shower of August, 1870, independently of the careful observations recorded at the Greenwich Observatory, appears in the last report of the British Association of Science. A comparison of the observations made at Greenwich on that occasion with those recorded in other stations enables the paths of thirteen meteors, ten of which are new to the former list, to be determined; the heights and velocities of the meteors thus identified are presented in this report. The result shows that the average height of sixteen meteors, referred to in the last report, was seventy-two miles at first appearance, and forty-eight miles at disappearance; of thirteen meteors given in the present list, seventy-two miles at first appearance, and fifty-four at disappearance; of twenty meteors observed in August, 1863, eighty-two miles at first appearance, and fifty-eight at disappearance. Thus it appears that the present average heights are somewhat less than those observed in 1863; but they agree more closely with the general average height at first appearance, viz.: seventy miles, and that at disappearance, viz.: fifty-four miles. The average velocity of the Perseids relative to the earth, observed in 1863, was thirty-four miles per second, and that of the three Perseids to the present list was thirty-seven miles per second; while the velocity obtained from the cosmical theory was thirty-eight miles per second.

A NEW EXPERIMENT IN GAS.—A patent gas company has just been formed in England, with a capital of \$250,000 in \$5 shares, which proposes to distil gas at a low temperature instead of a high one, as on the present system. By this means it is possible to use iron retorts instead of retorts of clay, at a great saving of expense, while the gas produced from the same coal is 30 per cent. more in quantity than the gas produced by previous methods, and the remaining products are also more valuable. There is said to be little or no sulphur in this new and cheaper gas.

Such is the account of this invention which has been privately making way, the latest facts coming out regarding it being that a French company has bought the privilege of using the patent in France for \$500,000, and that works are being erected for lighting the town of Barnet, England, with gas at an earlier date, which will supply an experiment on the largest scale.

FLEECE AND LOOM.

The Angora Goat.

The raising of the Angora goat has of late received considerable attention, and many inquiries have been made with regard to the adaptability of the soil and climate of California to this pursuit. Although first introduced into this State over ten years ago, they are not yet very numerous. This is owing partly to the fact that they were not easily obtained, and partly because an inferior animal yielded a profitable return for the money invested while pasturage was so cheap. Feed for sheep and cattle, up to a few years ago, was easy to be obtained in abundance on the government domain.

Although nine-tenths of the State is still the property of the government, the grass in most places has been appropriated for some time by private individuals. Now if a man pre-empt a quarter section, he will to a great extent, have to confine his sheep and cattle to that alone; the adjoining land will be occupied by some other person. But a farm of 160 acres used for pastoral purposes would not afford the owner a living, especially if he pastured on it only the ordinary kinds of stock. Hence the necessity of breeding animals that will, in proportion to the quantity of food they consume, bring in a larger income than either cows or sheep. That the Angora goat is such, has been amply proved by the experience of farmers both in California and the East.

Superior to Sheep.

They are superior to the sheep for the following reasons: they are almost wholly free from disease on the Pacific Coast, while the loss to sheep owners, every year, from that cause, is immense; and nothing but constant attention and frequent application of the necessary remedies will prevent whole flocks from being ruined. The goat eats almost any species of vegetation with which they come in contact, including many kinds that are poisonous to other animals, but which are eaten by them with perfect impunity. Living as they do to a great extent, on brush, there is not much danger that they will suffer from drouth, which causes such havoc among the stock, or else compel their owners to spend vast sums in obtaining food for them.

During some of the drouths that have prevailed on this coast, sheep and goats were kept in the same pasturage; but, in almost every instance, the loss among the former was many times greater in proportion to the size of the flocks.

Goats are excellent milkers; for this reason poor families that have no place in which to keep a cow could find it very convenient to supply themselves with milk by keeping a few goats. As the flesh is equal to the best mutton, at some future time when the goat will be cheaper, young kids will be fattened for the market. The goats could then be profitably milked and their milk turned into cheese. They live longer than sheep, sometimes breeding until the age of fifteen or eighteen years. They are better travelers than sheep; which is, in many parts of the State a very important advantage. Many localities contain abundant feed, but, owing to their distance from water, they are unavailable for even grazing purposes. They breed at a year old, while many kinds of sheep do not bring forth young before the age of two years. Their great advantage of course arises from

The Superior Character of Their Fleece.

This is of a beautiful white lustrous color, and from six to nine inches in length; owing to the beauty and durability of the fabric manufactured from the wool of the Angora goat, it brings in the Eastern markets over a dollar per pound. Very large quantities are imported, and there is not much probability that goat breeders will be able to supply our own market for many years to come. The average weight of fleece produced in this country varies from three to five pounds for the ewes and five to nine pounds for the bucks. The wool produced here has been exhibited in

New York and Paris, and experts in wool, though subjecting it to minute microscopic examination, could detect in it no inferiority to the Angora wool imported from Asia Minor.

A New Industry.

In entering on the breeding of Angora goats the breeder undertakes an industry for the development of which this State offers vast resources, and in which he is not brought into competition with the followers of any other pursuit. The day is not far distant when all the Angora wool produced in California, instead of being sent to the east, will be manufactured at home. Perhaps no people in the world wear in proportion to their number, so large a quantity of expensive clothing as do the people of California. Angora wool enters largely into the composition of the most costly and luxurious articles of wearing apparel; and, doubtless, if these articles were manufactured in California it would be some time before we could raise wool enough to supply the demand for home consumption. The value of this wool when manufactured is enormous, when compared with its value in a raw state; this is owing to the great amount of labor spent on the manufacture, being greater than that spent on any other textile. A few dollars' worth of wool is valued at nearly as many thousands when made into shawls. In Cashmere the labor of three men for a whole year is spent in making one shawl; but they sell here for several thousand dollars, and notwithstanding the high rate of labor in this country in comparison to that of Cashmere, perhaps the shawls could be manufactured here for a price smaller than for what they are sold. Two thousand dollars, the price of some of the shawls, divided among three persons would be a higher yearly rate of wages than most girls receive at factories in the East. Shawls manufactured in Cashmere could be sold here for half or a third of their usual price, were it not for the fact that every petty chief through whose dominions they pass on their way to the coast, levies a heavy tax (the amount depending on his caprice or necessity) on all goods that pass through his territory. As much of the work on these shawls is done by hand, expensive machinery is not necessary, and the business could be undertaken by any one that has the requisite skill.

Common goats can be bought at sums ranging from one and a half to three dollars each, and pure breed Angora bucks for two or three hundred dollars. Some breeders say that for the first cross a graded buck does as well as a pure bred one. One buck will serve about two hundred goats. However, the beginner need not go to the expense of buying a buck; he can, if he wishes hire one. He need not expect much return for the money invested for at least four years after commencing the business. This circumstance alone is enough to account for the fact that, while breeders of Angora goats speak of the business as being highly remunerative, it has not developed in the same ratio as other pursuits. California farmers as a rule, are unwilling to undertake any occupation that does not promise an immediate return. Hence no one should be deterred from giving the business a trial, because goats have not increased since their introduction into the State, as fast as Merino sheep.

A Few Other Considerations.

Pure bred goats seldom have more than one kid at a birth, but among the lower grades, as with common goats, twins and triplets are numerous. With a flock, say of two hundred common goats and a pure bred buck, there would yearly be one hundred wethers for sale. These would do more than pay the expenses of feeding and herding the whole flock. The herding never costs as much as that of the same number of sheep, as the goats invariably seek shelter at night without requiring to be driven by a shepherd. The ewes of course would be kept for crossing with animals of purer blood. Three years after engaging in the pursuit there would be a hundred three-quarter breeds fit to be shorn, but their wool would be both scanty and of poor quality. After another year these hundred would have seven-eighths pure blood and the wool would be quite valuable, though not equal to that of pure bred goats.

Any one wishing to give this pursuit a trial can now enter into it on any scale he desires. He can buy pure breed goats, or grade goats, an immense number of which are now to be found in the State. Most farmers will find it worth while to try the business on a small scale. Leaving wool out of the question, the

goats would be as valuable for milk as cows are. In fact the milk is said to possess many useful medicinal qualities, especially in cases of fever and similar complaints. There are in the State not a few places where ague is prevalent; but perhaps the residents of those localities would eventually escape that complaint by herding Angora goats and drinking largely of their milk.

The Native Country of the Angora Goat.

Angora, the place from which the goat comes, is in Asia Minor, about 220 miles east, southeast of Constantinople. Travelers in that region represent Asia Minor as having some resemblance to California in its climate and productions. The goats are often fed on table land varying from fifteen to two thousand feet above the level of the sea. In many of these places there is very little grass so that the goat lives almost wholly on the young shoots and leaves of the brush with which the country abounds. We have here in California many million acres of such land. In almost every county are large tracts covered with brush of very little use for any other purpose, but affording the best sustenance for the Angora goat. Until this is occupied, feed for them will be easily obtained when cows and sheep are suffering from hunger. This, coupled with a dry and mild climate, gives California an advantage over the Eastern states in raising these animals. Rain does not agree with them very well; and in the Eastern states they sometimes suffer from foot rot, a disease from which, here, they are altogether free.

How to Begin the Business.

It would not be wise for one to give up the pursuits that are known to be profitable, and begin others that are not so well known. Still, enough is known relative to the Angora goat to render goat breeding worthy the attention of stock-raisers. We have every facility for giving the business a fair trial without its being necessary for the breeder to undertake any dangerous risks. It would not do for everyone going into this business to go to Asia Minor and import the goats on his own account. The business of importation must be left to those well qualified to make their way in foreign countries or to those who have agents abroad on whom they can rely. Besides to begin with a large stock of pure breeds would require a large sum of money. The safest way then, is for the ordinary individual to begin by crossing the Angora with the common goat. Fortunately common goats are cheap and plentiful, and he who begins with a hundred or two of them could not suffer much loss even though the undertaking proved a failure.

Important.

In view of the fact that, special interest is awakened all through the foothill and mountain districts of California, and indeed the whole Pacific Coast, north to the British possessions, on the rearing of the Cashmere goat and its promise of largely remunerative returns, persons about to engage in their propagation will find it of the utmost importance that they commence with at least a few of the purest blooded animals, male and female, that they can get. It is the only way they can hope to attain to that perfection in the quality of fleece, that will enable them to be the sellers of pure bloods, to those who for years will be entering into the business. We can speak with confidence of the genuineness and purity of the stock imported and propagated by an El Dorado Co. goat grower, whose advertisement is in our columns.

INDIAN AGRICULTURISTS IN MONTANA.—An exchange gives the following figures: "The Nez Percés Indians on the Lopwai (Montana) reservation are a notable exception to the thriftlessness and poverty of their race. They have 9,000 horses, 1,250 cattle, and 120 swine. Their reservation contains 2,400 square miles, and they cultivate 1,059 acres. They raised this season, 7,500 bushels of wheat, 1,600 of corn, 3,400 of oats, 269 of barley, 7,500 of potatoes, 250 of turnips, and 500 of onions."

THERE are eight pin factories in the United States, the annual production of which is 2,000,000 packs, each pack containing 3,360 pins—a total of \$6,720,000—000 pins. About sixteen times this quantity is manufactured in England.

ONE REASON for the popularity of the RURAL PRESS is the fact that it possesses in its columns some attractions for each member of every intelligent family—old and young.

ABOUT \$50,000,000 are invested in manufacturing in Fall River, Mass.

Woodward's Gardens.

This popular place of resort is constantly gaining favor with the people. Novelties of every description are constantly being added, alterations and improvements are made from time to time, as circumstances or the pleasure and convenience of the public may seem to demand. In addition to occasional day performances, evening performances are now given every Tuesday, Thursday and Saturday evenings, by Ryland's celebrated Equestrian Troupe. Skating assemblies are held each day from 10 to 12 A. M. and from 1 to 5 P. M.; also every Tuesday, Thursday and Saturday evening. A weekly publication is also issued every Saturday in connection with this enterprise, called "The Programme," which is neatly printed and arranged. It is designed for an advertising medium and as a programme of performances and novelties for the week.

Among the notable improvements which have been recently made, we may mention extensive additions of rare and beautiful plants; a properly constructed pool and rookery for the exhibition of seals; a house for the protection of gallinaceous birds; rockwork and a fernery for the accommodation and shelter of several of the smaller tropical animals, etc.

An important and useful addition is also now in progress of construction in the shape of a marine aquarium, which will be filled with a superb collection of rare sea fish, molluscs of various kinds, crustacea, deep sea plants, etc., while curious and interesting deep-sea scenery will be arranged, all of which will furnish not only something pleasant to look upon, but a fruitful subject for study for both old and young. This costly and unique improvement is being constructed under the special supervision of Mr. Sehuman, who has recently returned from an extensive tour through Europe, where he has carefully noted all the latest improvements and data connected with the most celebrated works of this kind on that continent.

We may mention in this connection that the beautiful pet rabbits, illustrated and described on another page of this issue, are kept on exhibition and for sale by the keeper of the animals at the amphitheater connected with the gardens.

The Year's Product.

It is officially stated that the value of all the farm products of the United States during the past year—excepting the live stock—amounts to \$2,445,000,000. This represents the year's gross receipts, and it looks immense enough. But great deductions are to be made from it, before we can approximate to the clear profits of the year. The living expenses of our forty millions of people, for instance, are first to be taken out; then all the taxes, and the private debts falling due and the interest at least of the others, must be subtracted. We should find on examination, therefore, that the real profits on last year's production is not so great after all. We see that David A. Wells, in a recent lecture estimates that if the whole annual accumulation of the country was equally divided, each individual would receive but \$175. This shows how closely the world lives from hand to mouth. A year's cessation of work would bring the greater part of mankind to starvation, even if they were as well off on the average as the people of the United States, which they are far from being. Mr. Wells also estimated that the permanent accumulations of the English nation for the last 800 years amount to about thirty thousand millions; those for the United States for the last 250 years amount to about twenty-five thousand millions. The difference is owing to the greater intelligence of our masses and the superior natural advantages amid which they are placed; while the more general adoption of labor-saving machinery here, especially during the last fifteen or twenty years, has also worked in our favor.

TEA GROWING IN CALIFORNIA.—We are somewhat surprised that greater efforts to prove or disprove the adaptability of the soil and climate of California for the cultivation of the tea plant, have not been made in different sections. The duties on tea at San Francisco amount to nearly one-quarter of all the imposts paid there. If we can produce the tea here, and thereby save the heavy duty, the merest tyro in political economy can see the benefits to accrue to the State from a home production of this commodity. Samuel Brannan has on his Calistoga farm a few acres planted in tea, and it will, we are informed, prove a perfect success. We have a soil and climate which offer inducements for such new enterprises; and this is one which can be made quite remunerative. Let the matter be more thoroughly tested.—E.T.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

Transcript, Feb. 16: Our Alameda county agriculturists are of course interested in a little bill, introduced in the Senate by Mr. Comte, of Sacramento. It provides that where land is cultivated by the owner, there shall be no separate listing or assessment made for growing crops; but the Assessor shall, in making the assessment, treat growing crops as part of the land, producing such crops. Where land is cultivated by tenant, or tenants, the growing crops shall be listed, or assessed to him or them. This bill is in the hands of the Committee on Agriculture.

SWALLOWS.—Flocks of these feathery birds are now seen among the oaks— forerunners of spring.

BUTTE.

Review, Feb. 16: From all sections we hear cheering news of the crops coming up finely. Some of the land is still too wet for plowing, but the large area already sown, together with the volunteer, promises an abundant yield. On the Bidwell ranch, nearly 3,000 acres are already seeded, and about the 1st of March, Mr. Cochran informs us, he will bring under cultivation some more new land, as an experiment, to try the richness as well as the growing qualities of the soil.

CONTRA COSTA.

Transcript, Feb. 15: CITY HALL GROUNDS. The few days of hot sun that we have had has brought out the green grass luxuriantly. A species of grass known as the Kentucky blue has been sown and it is now making its appearance above the earth. This was sown this year, and last year parts of the ground failed to bring out any. One argument in favor of the grass is that it is always green, and if kept wet will form a magnificent lawn beautifier.

NEW MANUFACTORY.—A corn starch manufactory is in full blast on Broadway, between First and Second street.

The Oakland Library contains 2,400 volumes.

NEW POTATOES.—This vegetable is coming into market in large quantities.

EL DORADO.

Democrat, Feb. 10: Through the lower part of this county the farmers are busy getting in the balance of their crops, the late rains having made the ground in good order for plowing. The prospect is good now for heavy crops of all kinds. A much larger breadth of land is sown to wheat this year than ever before, and all that was sown before the last heavy storm is looking well and promises a heavy yield. The prospect of a flouring mill in this city, has induced farmers to raise more wheat than heretofore, thereby saving a large sum annually for breadstuffs and grain bought in Sacramento.

FRESNO.

Expositor, Feb. 7: We learn by private letter from the Bay, that the bridge for the railroad across the San Joaquin river has been framed and gotten in readiness to throw across the river as soon as the railroad reaches the stream. It is a Howe Truss, and is now lying ready for shipment at a moment's notice, in the Company's yard at Oakland.

The graders are busily engaged in preparing the road-bed of the railroad in this county, and will, if the weather is at all favorable, have the grade completed as far as the San Joaquin river by the middle of March. From all we can learn, the railroad men mean to force the work ahead as rapidly as they possibly can.

The completion of the railroad to Merced City is of vast benefit to the county. We can now get freights, when the roads are passable, at a far less figure than formerly, and traveling time is greatly reduced.

LOS ANGELES.

News, Feb. 10: No RAIN.—We have had no rain yet, although the sky has been very downcast for several days. Yesterday, the prospects of rain were very favorable, but toward night the clouds cleared off without discharging any of their contents. Farmers are clamoring loudly for it, and anticipating innumerable evils in case it does not fall soon. The cold weather that lately prevailed has done considerable injury to the grass, checking its growth materially everywhere, while in some places it has been almost altogether destroyed by it. The weather has moderated considerably, however, during the last day or two; in fact, it inclined towards sultriness yesterday. A strong faith of

an early rain-fall seems to predominate notwithstanding the fickleness of the indications. The grass which started over a month ago, is not over two or three inches in length in places where it has not yet been grazed. Had the weather been warm, the blades would have been at least a foot high in such places by this time.

Sap has commenced its upward flow, and pruning is being discontinued by horticulturists.

Large tracts of land in the Riverside settlement are being put under the cultivation of the vine.

The planting of young oranges is going on extensively in various parts of the city.

Stock, grazing on the adjacent hills, are improving rapidly.

Wool is now selling at 20@25c. per pound.

The local corn market is declining. It is now quoted at \$1.50.

Specimens of stone coal have been discovered in a cañon about twenty miles from town.

News, Feb. 7: A singular phenomenon appeared yesterday morning in the vicinity of the San Gabriel mountains, north of this city, in the shape of a large cyclone, apparently about two hundred feet in diameter, but which must have been much larger, as it was several miles distant from the point of observation. It passed along with great velocity, about midway between the base and summit of the mountains, its course being from east to west. A substance exuded from the top of the cyclone very much resembling smoke, while its main column appeared like a dense body of dust. After being visible to the eye for a minute or more, it suddenly veered to the right and passed in a northward direction, over the top of the mountain and settled out of sight.

NAPA.

Reporter, Feb. 10: Samuel Braunan has on his Calistoga farm a few acres planted in tea. It will we are informed, prove a perfect success.

The Chiles Cañon road, we are reliably informed, is now open, and in fair traveling condition. Teams can easily pass to the head of Pope valley by this route.

A petition is now in circulation, and has already received more than 160 signatures, asking such a modification of the existing law as will restrain cattle from running at large in Napa City.

The subject of sericulture is now attracting the attention of capitalists and agriculturists generally in our State and county. The experiments which have been made have been even more successful than the most sanguine expected.

"Land buyers are beginning to come round frequently, looking for places upon which to settle.

Unlike the Chinese, we are not afraid of strangers, but are willing they shall come and trade with us. We, indeed, are willing to go half way to meet them."

SANTA CRUZ.

Sentinel, Feb. 10: MOUNTAIN FARMS.—During a recent trip to Felton, we were informed that a large number of farmers are settling in the mountains of Santa Cruz near the Santa Clara line, on the head waters of the San Lorenzo. Mr. R. Gray, Mr. E. H. Kelly and several others are putting in grain and planting orchards and vineyards. Wherever a piece of open land is found crops of grains and hay will be cultivated.

Feb. 17: The large pear trees in the Mission orchard are white with blossoms and have been for a week past. The almond trees are past bloom and the wild cherry are almost in full leaf. This is in great contrast to the cold and freezing weather of the Eastern, Middle and Western States.

SAN JOAQUIN.

Independent, Feb. 17: PATENT FOR TOBACCO CURING.—J. D. Culp, who, as newspaper readers will remember, has succeeded in raising and curing in the vicinity of Gilroy, tobacco of the Havana variety equal or superior to any of the imported samples, has secured a patent for his process of curing, and has returned from Washington with the purpose of planting a thousand acres near Gilroy with the finest varieties of Cuban tobacco.

THE NEXT FAIR.—At a meeting of the Board of Managers of San Joaquin Valley District Agricultural Society recently held, it was resolved that the next District Fair commence on Tuesday, September 3, 1872, and continue four days.

STOCKTON WOOLEN MILLS are in constant operation and are manufacturing excellent flannels, worth from sixty to seventy cents per yard.

For some time past, apricot trees have

been in blossom in this city, but not until yesterday have we known of any pear trees being in bloom. There are several of the latter in blossom at the residence of Mr. Love.

SANTA BARBARA.

Press, Feb. 10: A CLOUD BURST.—During the late rainy weather, there was what is called a cloud burst in the deep cañon in the mountain side, above Col. B. Dinsmore's place, during the evening, and suddenly a rush of water ten or fifteen feet deep, like a tidal wave, came roaring down the creek bed, and overflowing its banks, tearing up trees of a foot and a half in diameter, while the impetuosity of the torrent took up and carried along the current huge boulders six and seven feet in diameter, and ten to twelve feet long! In half an hour after this terrific demonstration the waters had all disappeared, and the quiet little brook went singing on its way, as before.

On Tuesday last we had the exquisite pleasure of enjoying the fine scenery of Montecito. The valley is now very attractive, the newly plowed lands, the fresh green of the wheat and barley fields, and darker green of the oaks in patches, make the landscape very charming.

TREE PLANTING.—As the time passes, the enthusiasm for tree planting increases. The last steamer brought down forty tons of almond trees for Elwood Cooper, Esq., who is engaged in developing one of the finest farms in the State. Such far-seeing enterprise will meet with an abundant reward in a very few years.

AN ORANGE TREE.—The most elegant young prophet we have yet seen in this fair portion of the State, is the young eight-year old orange tree on Gus. Dinsmore's place. It is literally yellow with fruit, not less than seven hundred oranges have matured on this young tree. Here, then, is a prophecy of what we shall in a few years see, namely, the growth of thousands of such trees along the warm and productive foothills of the mountains, extending some fifty miles beside the coast, and being perfectly sheltered from the cold N. W. winds.

GRAIN GROWING.—It is gratifying to know that the farmers are putting in an unusually large area of wheat and other small grains this year. The county ought to raise its own breadstuffs this season.

Press, Feb. 10: In the character of the climate of Santa Barbara; in the productions of her soil; in the topography of her situation; in her favorable position for commercial relations, and in her admirable adaptability to manufacturing industry, we find the various influences that will impel her to grow to be to Southern California what the cities of Tyre and Sidon were to ancient Syria, and to the eastern shore of the Mediterranean.

The peculiar health-restoring qualities belonging to the climate of Santa Barbara, together with certain advantages and influences connected with her position, will be at the command of the denizen of the broad plains beyond the Santa Ynez. The same sun that brings wonderful productiveness to the rich soil of Tulare valley brings also, in mid-summer and fall, a tropical heat that makes men yearn for cool breezes, leafy shades, and lavings of pure water. You hasten to a softly cushioned seat in a palace car, and glide down to the sea on lines of glistening steel. In two hundred minutes you are in the "Paradise of Earth;" you have your feverish limbs in the foaming breakers of "grand old ocean;" you walk in shaded bowers, and your senses are entranced in groves where the air is laden with invigorating odors. The cool breeze allays the throbbing pulse, and gives ardor and vim to every nerve. Man and the world are new-made; and the struggles for wealth or fame can be resumed in the Empire of Tulare at to-morrow's dawn.

SAN DIEGO.

Union, Feb. 8: FARMING AT BALLENA.—The farmers in the Ballena district, have nearly completed the sowing of grain on their lands. The cultivated fields wear a bright green appearance, and the grain is doing excellently. So far in this section the rain has been abundant, and no fears of a failure of the crop are apprehended. On the contrary the expectations are that it will be unusually large this coming year.

The farmers who have sowed wheat and barley in Spring valley and the neighborhood are confident that with a shower or two more this month and in March, they will be able to make good crops of grain. The wheat and barley are looking excellent at present, the blades of the grain being fully four inches in height and of a beautiful green color. Evidently the grain has

not suffered much from a scarcity of moisture thus far. The grass has also a fresh green appearance, and is sufficiently high to prove good feed for cattle and horses.

TULARE.

Times, Feb. 10: County Surveyor, James M. Johnson informs us of a lively business in land matters during the past few weeks. No less than six pre-emption claims were filed on Monday last, and others have been coming in during the week. Land which has been perfectly bare for the past three years, is now covered with a green verdure of volunteer growth. This will be one of the most prosperous seasons for Tulare county we have had in many years. In some fields the grain has already started forth, and gives assurance of a successful and abundant harvest.

YOLO.

Mail, Feb. 10: In conversation with a gentleman who has been traveling considerably through the county lately, we learn that our farmers have been making an effort to seed every acre of ground they possibly can. He thinks that before the first heavy rains there were as many acres sown as ever had been in one year in the county, and since that time one-third as much more. If no disasters in the way of north winds or rust visit us in the spring, this county will produce a tremendous crop.

YUBA.

Appeal, Feb. 20.—ORANGES AND LEMONS. As a pretty sight as one meets with in running around the town, is the orange and lemon trees in the gardens of Messrs. Bokius, Nightingill and others. They are loaded with fruit of fine quality and large growth, showing that the people of this locality could raise this fruit easily, if they would plant the trees.

CHICKENS.—The price of chickens has increased lately in Oroville. The last quotations place the price at \$15 per dozen. We should think that the gentlemen of the press would try to write down those prices, until they reach a reasonable figure. But perhaps they are fond of poultry and interested in keeping their market up. How is it? "We pause for a reply."

OREGON.

Feb. 10. MORE FINE STOCK.—W. C. Myer of Jackson county, writes from St. Louis to the *Times*, that he will soon return to Oregon with a fine imported Percheron stallion and mare, four thoroughbred Durham cattle, four Alderney cows, (the best breed for milk and butter of the cow kind), five pure blooded Cotswold sheep, three white Bramah fowls, a pair of genuine scotch terriers and a brace of pure bred Maltese cats. This gentleman has heretofore brought much fine stock into Oregon.

The farmers in the Umpqua valley, in view of the fact that to market their crops of the ensuing harvest they will have the advantage of railroad transportation, are cultivating more land than ever before, and a year of unexampled prosperity is anticipated with confidence. Live stock of all kinds are thriving in the Umpqua, and there is no suffering from want of shelter or fodder.

A correspondent says: People have found that farming will pay, and that it pays best to farm right. This idea of plowing one inch deep, throwing on the seed at random, and running over it with the top of a scrub white-oak, and trusting to luck for the harvest, has gone out of date. System is superceding chance, and book farming is no more looked upon as the "consarned ideas of a New York counter-jumper," as I once heard a man say when importuned to subscribe for an agricultural paper.

Oregonian, Feb. 10: The winter thus far has been severe on stock in all cases where the owners had placed their dependence on browsing instead of feeding. Letters from Wasco county represent the loss of cattle as comparatively small. In this county, so far as we know, there have been no more than the usual losses; the farmers very generally, have had plenty of feed. The winter, however, has been an expensive one. The same remarks will apply for Washington and Clackamas counties.

The Salem *Statesman* says that in Marion, Yamhill and Polk counties, the farmers generally have had a good supply of feed and under such circumstances it is not very probable that stock would be allowed to suffer. So far, the cattle have fared well; what their condition will be in two months hence will depend upon the weather and the amount of feed. We are informed that an occasional lot of sheep are looking rather lean, and that probably some will die, but the number in this plight is not great.

Agricultural Review—Concluded.

Forest Culture.

No more important subject can engage the attention of a California Legislature than the encouragement of tree and artificial forest culture. The most wisely managed and most enterprising and prosperous countries of Europe long since saw the importance and necessity of planting and cultivating forests, and England and Scotland can boast of their thousands of acres of majestic pines, beeches, and oaks, at home, and their extensive forests of valuable timbers in their provinces abroad. Germany has large groves of our valuable California redwood growing in Government forests, in connection with other groves of valuable timbers collected from all portions of the world, and these forests are the pride as they are monuments of the wisdom of the nation. Germany has a special Bureau of the Government, devoted to the cultivation of the science and practice of artificial forest culture, and the preservation and protection of the natural forests. France, Austria, and Russia, even at an early day, gave to forest culture the countenance and encouragement of the governments, and now the artificial forests of those countries are classed among the most valuable and highly prized government property. California naturally was but a very poorly timbered country, and the limited natural forests within her borders have been most recklessly and uselessly destroyed. While it is one of the first duties of the State to check this reckless destruction of the natural forests, it is a matter of no less importance to encourage and foster the growth and cultivation of artificial forests.

Hard Timber.

The scarcity of hard wood timber in this State, fit for the manufacture of wagons, carriages, and agricultural machinery generally, has operated to retard these particular branches of mechanical industry, and has at the same time been a serious tax on the farmers who have been under the necessity of using such machinery. From the fact that so few valuable varieties of hard timber were found growing here, naturally the impression generally prevailed that the climate of the State was not adapted to the production of such timber; that even though the most valuable kinds should be planted and cultivated here artificially, the timber thus grown in our climate would be brash and brittle, and would be of a poor quality generally, like that of the native production.

Recent experiments, brought about by the efforts of the State Agricultural Society and the offering by them of small premiums in a judicious way, have most effectually proven these impressions not well founded. It has been shown by positive experimental proof that the best Eastern varieties of hard wood timber, particularly the black and yellow locust, the black walnut, the wild black cherry, the osage orange, the rock and hickory elms, the various kinds of hardwood mulberry, the butternut, the chestnut, and the hard maple, and many other good varieties can be grown here much more rapidly than in their native forests of the Eastern and Western Atlantic States. Not only this, but the timber of many of these kinds of trees grown here has been thoroughly and practically tested by competent mechanics, and found to be equal in all the qualities of durability, elasticity, and strength to the timber of the same varieties grown East. We have also imported and grown successfully some of the most valuable varieties of hard wood trees from Australia, and the timber produced from these is also found to be equal to that grown in its native country. The facts thus obtained by a small outlay are very valuable and suggestive, and, in our opinion, warrant a special appropriation by the Legislature of a liberal sum of money, to be judiciously expended through the medium and under the direction of this society or its officers for the encouragement of artificial forest culture.

Irrigation and Reclamation.

The season of 1871 was a season well calculated to call general attention to the benefits and prove the necessity of the adoption of some general plan of irrigation throughout each of the large open valleys of the State. The year of 1872 is ushered in under circumstances equally as well calculated to call general attention to the benefits and prove the necessities of some general plan of reclamation from ruinous overflow of a very large portion of these same valleys.

An experience of twenty years, during which time the State and individuals have squandered beyond redemption, in efforts at

special reclamation, millions of money, and the floods have swept away millions of property and caused an incalculable amount of suffering and the loss of many lives, has pretty effectually proved the utter uselessness of any effort to reclaim any considerable portion of the swamp and overflowed lands of the interior of the State, on any plan or system that shall not embrace within its scope all of this class of land bordering on the Sacramento and San Joaquin rivers and their tributaries, including the islands about their confluence.

The same experience has proved the utter impracticability of any plan or system for such reclamation that shall not contemplate additional channels to conduct the water through the great valleys which are by nature necessarily the receptacles of the vast quantities of water that fall on the great extent of rapidly sloping watersheds that so closely surround them, as well as additional outlets into the bays or tide water at points some distance from the one at which all these waters are now by natural channels concentrated, and as it were heaped up together. These propositions suggest the propriety and importance of considering a joint plan of reclamation and irrigation, that shall embrace in mutual interests and mutual benefits, and consequently mutual duties and joint expense, the entire portion of the State lying between the Coast Range and Sierra Nevada Mountains, and north and east of the Bay of San Francisco. This district of country embraces an area of not less than five million acres of land—the largest portion of which, owing to the drouth and floods, to which it is so frequently subject, is not sufficiently reliable as an agricultural country to support above the contingencies of occasional loss and suffering any very large amount of population, but which, if securely reclaimed from destructive overflows, and supplied with the facilities of necessary irrigation, can be made to support more easily and in a condition of greater permanent prosperity than the present inhabitants enjoy, one person to every acre of land within its limits, or five million of people.

The longer the adoption of some plan for general irrigation and general reclamation is delayed, the greater the difficulties in which the subject will be involved. Local plans and special systems will engage the attention and enlist the energies and means of the people, conflicting rights and vexatious questions of water privileges will grow up to involve them in unfriendly contention and fruitless litigation, and the whole country will suffer for the want of a system of general wholesome laws, that shall secure equal privileges and equal rights to all. The Legislature cannot too soon address itself to the earnest consideration of this subject.

Bunch Grass.

[Written for the Press.]

In a recent discussion before the Farmers' Club in this city, upon the comparative merits of different grasses for grazing purposes in California, wheat and barley took the palm as being the best and most profitable of any grasses yet tried for pasturage. Owing to the protracted drouth of the summer seasons on this Coast, many varieties of nutritious grasses cultivated in Europe and in the Atlantic States, will not thrive here. Even wheat and barley are not proof against the desiccating effects of our climate, and it is therefore the part of wisdom to carefully test such varieties of pasturage grasses as are known to thrive in arid soils.

Every observant person who immigrated to this country via the overland routes, or who has since been a sojourner in the sterile wastes of Utah, can bear witness to the extraordinary tenacity as well as to the surprising nutritive quality of the "mountain bunch grass." In the most forlorn, dismal and almost inaccessible rocks and crags of the black mountains of Deseret and Nevada, the sturdy bunch grass clings and thrives unharmed by the desert storms of winter, or the parching heat of the rainless summer. Were it not for this remarkable grass, life for herbivorous animals would be almost impossible in the great American Basin; but by a beneficent provision of nature the enveloping snows of winter protect the life of the plant from blighting frosts and cause it to shoot forth

luxuriantly in early spring when the snow has melted away. "Bunch grass" is a perennial and as its common name implies, grows in polyform bunches from a single root, or stool. In mountainous regions it rarely grows to a height of more than 18 inches. When young it is tender and succulent, and when fully matured bears a heavy crop of nutritious seeds. The seeds are heavy and not unlike those of the common timothy grass. The seeds of the bunch grass are one of its chief sources of nutritious value, for the reason that after maturity the dry weather preserves it until late in the autumn, long after every green thing has withered. The rapidity with which all kinds of stock fatten upon the matured grass has attracted the attention of California stock-raisers, and now, annually, when the pasture fails in the Cow Counties, large herds of sheep, cattle and horses are driven to the hills of Nevada. There is no apparent reason why this valuable bunch grass might not be made to grow and thrive upon the mountains and hills of California. The length of our dry seasons is precisely the same as in Utah. The trap and granite formations of the hills are very similar to that of the Great Basin generally. The climate here, especially in the Coast ranges, is much less rigorous, and there is every reason for believing that the famous grass would grow as well, if not better, here than in Utah. The writer is not aware that the experiment to propagate this grass here has ever been practically attempted, and it is to be hoped that some enterprising mountain farmer, or ranch man may give the grass a thorough trial. The importance to the State of such experiments being made, is rendered apparent by reason of the fact that wild oats, yellow clover and other indigenous grasses, are rapidly becoming extinct, and something must be done to supply the deficiency, or we shall shortly be wholly dependent upon Utah and Texas for pasturage.

QUERCUS VIRENS.

San Jose, Feb. 1872.

Commissioner Drummond's Circular.

The Order to Prevent Settlement in the Foothills.

The letter of Instructions of Commissioner Drummond, issued Dec. 2, 1871, and to which we briefly alluded at the time, is attracting much attention, and is evidently calculated to work a great injury to the mining counties, from the fact of its tendency to discourage further agricultural settlement in the foothills, and thus interfere with an important source of prosperity which was just beginning to be opened up in those counties under the previous instructions of Commissioner Wilson. The purport of this letter, which has been called "An Order to Prevent Settlement in the Foothills," is a formal withdrawal from disposal, under the agricultural land laws, of all the lands in 83 townships in the foothills of Tuolumne, Calaveras, Amador, El Dorado, Sacramento, Placer and Nevada counties, which townships are especially designated as follows:—

Township 1 north, ranges 12, 13 and 14 east. Township 2 north, ranges 11, 12, 13, 14 and 15 east. Township 3 north, ranges 10, 11, 12 and 13 east. Township 4 north, ranges 10, 11, 12 and 13 east. Township 5 north, ranges 10, 11 and 12 east. Township 6 north, ranges 10, 11, 12 and 13 east. Township 7 north, ranges 9, 10, 11 and 12 east. Township 8 north, ranges 9, 10, 11 and 12 east. Township 9 north, ranges 9, 10, 11 and 12 east. Township 10 north, ranges 8, 9, 10, 11 and 12 east. Township 11 north, ranges 6, 7, 8, 9, 10 and 11 east. Township 12 north, ranges 6, 7, 8, 9, 10 and 11 east. Township 13 north, ranges 6, 7, 8, 9, 10 and 11 east. Township 14 north, ranges 7, 8, 9, 10, and 11 east. Township 15 north, ranges 7, 8, 9, 10 and 11 east. Township 16 north, ranges 7, 8, 9, 10, 11, 12, 15, 16 and 17 east. Township 17 north, ranges 16 and 17 east. Township 18 north, ranges 16 and 17 east; and township 19 north, ranges 19 and 17 east—all Mount Diablo base and meridian.

The effect of this order is to require all people who have settled or who may hereafter settle in the foothills to apply to the Land Office, advertise for thirty days, and have a trial, with witnesses, to prove that the land they may claim is more valuable for agricultural than for mining. If the decision is in favor of the settler, the fact is made known at Washington, and if no contestant appears within a year or two he will be allowed to "prove up" his claim and get his patent. The cost of both trials and advertising is thrown upon the settler, and will amount to double the Government price of the land.

This order is reversing the rulings of Commissioner Wilson, who held that all the land

above described was agricultural, and threw the cost of proving to the contrary on the miner, who, of course, is the only one who can be expected to have the proof—his "diggings" or quartz vein constituting the fact of its mineral character. By this decision the farmer is in fact called upon to prove a negative.

The reason for this reversal of Mr. Wilson's instructions are stated by Mr. Drummond as follows:—

This course has been forced upon the Department by several circumstances; among which may be cited the fact that the majority of applications for mining titles from California are for lands marked "agricultural" upon the official township plats; that in making these returns of surveys, large areas in the heretofore reserved mineral belt are marked on the plats as "agricultural land," while upon the same plats, and within the tracts so returned as agricultural, are annotations of "quartz ledges," "mining ditches," "hydraulic mines," "diggings," etc., the plat thus contradicting itself, and leaving this office in the dark as to the true quality of the land.

In a case now pending before this office, of an application for patent for a quicksilver mine—one which has been worked for years—it was found that the land was returned as "agricultural," and, falling within the limits of the grant, was patented to the Western Pacific Railroad Company before said application was received.

The Commissioner fears if the rulings of Mr. Wilson were continued the mineral lands would be indiscriminately absorbed by speculators. But it is evident that the land office at Washington does not fully understand this question of mixed mineral and agricultural lands, and it is unfortunate for the people—our agricultural settlers in the foothills especially—that the power held by the General Government over those lands, is exercised without a full knowledge of all the facts.

Under these circumstances it is to be hoped that Mr. Sargent, our newly elected Senator, who fully understands all the facts in the case, and that the prosperity of our mining counties depends largely on the encouragement of agriculture within their foothill limits, will take this matter in hand, and, if possible, secure by Legislation, what it seems impossible to effect by official routine. There is really no difficulty in the matter, if our officials will only go honestly and intelligently to work. The new order seems to have no better argument in its favor than that the Commission found some difficulty—which is simply misapprehended—in carrying out the old rulings, which, while properly administered, gave satisfaction to both the agriculturist and the miner, and were contributing largely to the development of an important but hitherto neglected portion of the public lands, and the consequent prosperity of the counties in which they were located.

MANZANITA.—This scrubby bush (for it seldom attains the dignity of a tree) is well known to all old Californians, who are Californians enough to have visited the beautiful mountains of the State. The wood of the manzanita is hard and susceptible of a beautiful polish. In early days a man who did not carry a walking-cane made of manzanita was not exactly in the fashion. Such canes became too common however, to continue the rage in California; like "specimen jewelry," they were valued only as presents to be sent East. No one in these days hears of a great man being presented with a manzanita cane which has a gold head quartz setting. The pioneers of the mountains at an early day discovered that the manzanita made a most excellent firewood. It makes the hottest fire of any wood to be found in the State, or perhaps any to be found in the world. There is a drawback, however, to the qualities of the manzanita as fuel. It makes too hot a fire for the stove of the period. It burns out a stove too rapidly for economy. In an old-fashioned fire place the piled manzanita logs with brilliant flame, lively sparkle and glowing coals make all the comfort a fire can make, of a night when the thermometer is coquetting with zero. So the large manzanita bushes have been cut away from the hillsides near mining camps.

The Digger Indians have always used the berries of the manzanita as food. They contain a large percentage of grape sugar and are rich in gluten. Manzanita grows all over the mountain sides of California, on the Coast Range, and on the Sierras. It grows from low down in the foothills to an elevation of 3,000 feet. The production of these berries is therefore practically unlimited, as nature has arranged it. What can be done by cultivation?—*Grass Valley Union*.

Farmers, write for your paper.

USEFUL INFORMATION.

A Word About the Moon.

Every one is familiar with the singular phenomenon known as the "new moon carrying the old moon in her arms," when, in addition to the slender crescent, the whole disc is more or less distinctly visible a few days after the new moon; the same appearance, or "the old moon nursing the new," presents itself in like manner in the waning moon, when she rises a few hours before the sun; but we fear there are few who shake off dull sleep to see it. This is what is called the *luniere cendree*, or ashlight of the moon. Its appearance used to be taken as an indication that the moon was phosphorescent, or possessed some light of her own, independent of that she receives from the sun. Now, however, it is satisfactorily proved to arise from the sunlight reflected from the earth upon the dark moon; for it must be remembered that the earth is to the moon what the moon is to the earth, a reflector of the sun's light; and when it is new moon to the earth it is full earth to the moon, and *vice versa*, and thus the opaque moon becomes illuminated by earth-light—to use a term analogous to moonlight; but on account of the great size of the earth compared to the moon, this light is 14 times as bright as our moonlight, and thus occasional brilliancy of this "reflection" is accounted for.

Science Perfecting Swimming.

Fredric Barnett, of Paris, has invented and patented a very novel yet simple apparatus for swimmers. The invention consists in supplying to man by art the apparatus which has been given to the frog by nature. For the hands he has a large membranous fin which is held to its place by loops passing over the fingers and a strap around the wrist. The surface presented to the water by these fins is so large as to add greatly to the effectiveness of the strokes of the arm, but not so large as to exhaust the muscular power. Their effect is to very much reduce the effort required to swim without them. But the greatest ingenuity is displayed in the form and fitness of the fins for the legs, which are attached to the ankles, and are so formed that they act upon the water, both in the movement of bringing the legs together and throwing them back. They act so finely in treading water, as swimmers call it, that one can really walk, if not on the water, at least in it. The difference between swimming with this apparatus and without it, is very much like the difference between rowing a boat with a handle and the blade of an oar. The old swimmer has no trouble in using the fins at first trial, and is surprised to find with what strength he can swim without exhaustion. He easily swims twice as fast with the apparatus as without it, and he can sustain himself for hours upon the water, or swim miles with it.

A SIMPLE ALARM CLOCK.—Take a common weight clock and have a small hole in each of the boards that support the works inside, in any convenient place near the hammer. Having attached a small wire or string to the wire that makes the clock strike in regulating, pass it through the holes and under the time weight, through another hole in the case to the outside, where, having secured it, you have an alarm clock that was never intended as such. The time weight in descending will press on the string and make the hammer strike until the whole weight runs down. To set the alarm the time weight must be gaged in winding, as it descends about one-half inch in three-quarters of an hour. This is a boy's invention. It will wake a person without frightening him, which some other alarms will not do.—*Scientific American.*

KEEPING FISH FRESH WITH SUGAR.—A method adopted in Portugal for preserving fish consists in removing the viscera and sprinkling sugar over the interior, keeping the fish in a horizontal position, so that the sugar may penetrate as much as possible. It is said that fish prepared in this way can be kept completely fresh for a long time, the savor being as perfect as if recently caught. Salmon thus treated before salting and smoking possess a much more agreeable taste; a tablespoonful of sugar being sufficient for a five-pound fish.

How many of our lady readers ever dreamed that we send to Great Britain annually, fifteen million dollars in gold for the single article of spool cotton?

GOOD HEALTH.

Medicinal Properties of Petroleum.

In nearly every drug store is found a celebrated remedy recommended by English physicians, originating in Asia and pretended to be manufactured in England, known as British or Rock Oil, which is prescribed as a liniment for rheumatism, neuralgia, etc., which is nothing more or less than pure petroleum and, it is no doubt often used with very beneficial effect.

As a further example of the uses of petroleum for sanitary purposes, we may cite the following very interesting and valuable facts: Dr. Gelcich, during the recent epidemic rage of small-pox in Los Angeles, had many patients afflicted with that disease, and moreover had to officiate as County Coroner, in performing the duties of which he was often called upon to enter houses and have bodies removed for burial. In fumigating such places he found the most effective way was to place two or three ounces of the oil in a frying-pan, set it on fire and put it in the middle of the rooms. As a precautionary measure for himself he washed his hands in petroleum when it became necessary to handle the bodies; he also recommended to every family to place a small quantity in a saucer in the corner of every room, which neutralized the miasma, purified the atmosphere and effectually prevented the spread of the infection. He believes that to this method is to be attributed the success that attended his practice during the eleven months continuance of that terrible epidemic.

Antiseptic Properties of Petroleum.

The antiseptic properties of petroleum are well described by Dr. J. W. Twoler, Professor of Chemistry, etc., in Hobart College and Geneva Medical College, in his analysis of it made some time since. He first describes what putrefaction is and states, "that it is the decomposition, decay or natural destruction of dead or organic matter. That which promotes putrefaction is air, moisture, warmth, cryptogamic plants and infusory insects. Dead organic substance, deprived of air and moisture and kept in a vacuum, resists putrefaction for an indefinite time. Chemicals may act in various ways in checking and preventing putrefaction; they may in the first place exclude air and moisture mechanically, as it were, like oils, resins, paints, tars, gums, etc."

Now certain chemicals act in a two-fold manner—they may either abstract water from the organic matter and form new compounds, or they may extract the moisture by the oxygen of the air. Such antiseptics are alcohol, common salt, salt-petre, etc. Others again, act in a three-fold manner; they abstract the water, exclude the air and destroy animal and vegetable life.

The substance that will best perform all this work is petroleum. If for instance, a log of green wood be immersed in petroleum, the water and air in the pores of the wood are displaced by the petroleum. Petroleum thus excludes air and moisture from organic substances. It also destroys living vegetables and animals. Petroleum contains no oxygen—which is a necessary element of decomposition. Out of all substances this hydrocarbon appears to be the most powerful antiseptic known; and I have no hesitation in recommending it for the purpose set forth."

As an Antidote for the Bites of Poisonous Insects, Reptiles, Etc.

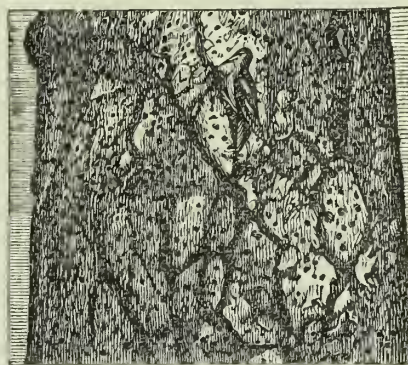
Petroleum is, also, a specific for the cure of the bite of venomous insects, such as bees, spiders, etc., and the bite of reptiles. A farmer in Illinois had a large beehive near his house; one day some children playing near it annoyed the bees, which suddenly attacked the intruders and stung some of them in a terrible manner; the mother of the children immediately washed with petroleum the parts stung and instant relief was obtained. The same writer asserts that petroleum is an antidote for the bite of the rattlesnake and reptiles of kindred nature.

OFFENSIVE BREATH.—For this purpose, almost the only substance that should be admitted at the toilette is the concentrated solution of chloride of soda. From six to ten drops of it in a wineglass full of pure spring water, taken immediately after the operations of the morning are completed. In some cases the odor arising from carious teeth is combined with that of the stomach. If the mouth be well rinsed with a teaspoonful of the solution of the chloride in a tumbler of water, the bad odor of the teeth will be removed.

The Acorn Woodpecker.

The accompanying cut represents the result of the woodpeckers' industry and forethought in providing for himself provisions for winter use, and storing them where they are safe from the depredations of his enemies. In the forests of the Pacific slope these birds abound, and their work may be seen on every thick-barked tree where acorns are plenty, the bark perforated with little holes from the bottom to the top. When it is borne in mind that one variety of trees grown in this State, the Sugar Pine, furnish the finest specimens of tree growth in the world, and that their trunks often form a perfectly true column for over 100 feet without a knot or branch, towering altogether sometimes over 200 feet high, these industrious little birds must have a good deal of work to do to perforate the bark of such trees, as they often do almost continuously, from the lower branches to within twenty feet of the ground.

Some old weather-wise individuals claim that these busy little elfs unerringly foretell in autumn the severity of the approaching season by the number of acorns they put in store for winter, hiding away unusually large quantities before our



THE WOODPECKER'S INDUSTRY.

hardest seasons. Whether this be so or not, they display great ingenuity in the manner in which they cut the holes, for they are made in such a manner that the squirrels can not take the acorns out. The acorns in this country are much larger than those in the Eastern States, and the birds cut a hole about two inches long, push in the acorn and drive it in tight with their bills in such a manner that it is difficult to extract it even with a knife. They never put an acorn twice in the same hole and as a consequence the trees of our forests are pretty generally covered with them. At any time during the autumn the traveler may hear their peculiar drumming sound as he passes through the woods. Some people state that they never eat the acorn itself but the little worm which is always found in them after a certain time, which accounts for their not consuming them early in the winter. However this may be the acorns are pretty generally destroyed by spring, and the little holes with the shuck of the acorn remain to show where the woodpecker's storehouse has been.

California Petroleum.

Discoveries in San Fernando, Los Angeles County.

The telegraph last week informed us that an experimental shipment of 100 barrels of crude petroleum was being shipped from San Fernando District, Los Angeles, for the petroleum refinery of this city. We had already been informed that recent developments at that locality had been such that much attention was being attracted to those deposits, and on further inquiry we have learned that a company is being formed in this city to thoroughly develop the deposit, and secure a home production for this important and indispensable commodity. From the facts which have been elicited, we feel warranted in saying that one of the most important enterprises is about to be set on foot which has yet been attempted in the State. The gentlemen engaged in this enterprise are so sanguine of success that they are preparing the material and machinery to commence opera-

tions in a short time, and orders have already been received from a single house, for 1,000 barrels of oil per day, under a contract for an unlimited time—an order which the company feel fully assured they will be able to answer as soon as the proper arrangements can be made to commence operations in earnest.

The Locality of These Deposits

Is at a point about 35 miles distant from the Los Angeles Railway Depot, over an excellent road; and from thence to the shipping point at San Pedro, the distance is 21 miles by rail—total distance to seaboard 56 miles. The wagon road to the railroad is better in winter than in summer—thus insuring good transportation at all seasons of the year. According to latest accounts from the locality, the deposits are very extensive, and from the work done upon them up to this time abundant proof has been adduced that natural petroleum of the highest grade is about to be added as an important and valuable addition to the commercial wealth of California. In addition to numerous natural springs, from whence the petroleum can be readily gathered in quantity, several wells have been sunk with the most satisfactory result. The shipment above alluded to has been dipped with buckets from natural springs, and yields from 60 to 65 per cent. illuminating oil, while the residuum is valuable for gas purposes, fuel, etc.

The formation where these deposits are found, lies in a range of mountains trending nearly east and west, and varies in width from a few hundred feet to a mile or more. The oil is found oozing out from a strata of shale and sandstone, wherever the gulches and cañons have cut it to any considerable depth. In addition to the wells, several tunnels have also been run, to tap the deposits, from the walls of which the oil oozes, wherever they enter the shale or sandstone strata. The cost of transportation from the springs to the railroad is about two cents per gallon.

Commercial Value of Petroleum.

It may be interesting in this connection, to look for a moment at what this product of nature is still doing for Pennsylvania, after many years of uninterrupted yield. By examining the commercial statistics of Pennsylvania it will be seen that the export of petroleum from that State for the year 1870, amounted to the sum of \$34,000,000, more than the gold yield of California. This product has added greatly to the prosperity of Pennsylvania, and is a source of immense wealth. The demand for petroleum all over the world is very great. The traveler finds it in England, Germany, Russia, France, Italy, and Turkey—all imported from Pennsylvania.

In the report of the exports of Philadelphia for eleven months of last year, petroleum is the leading item of that city, amounting to 52,135,600 gallons at a valuation of \$12,457,400, about 23½ cents per gallon, at the rate of \$1,132,490 and 10-11 per month. It has been remarked with great justice, that petroleum is to Philadelphia what wheat is to San Francisco, only that there is more certainty in the supply and the demand.

Consumption of Kerosene in California.

On the Pacific Coast large quantities of this oil are imported from the East, at very great risk and cost, and almost immediately consumed. The demand is increasing as its uses are becoming very much extended. The Metropolitan Gas Company of this city, intend to use petroleum altogether for making its gas, and the light from it has been shown to be far more brilliant and cheaper than that from coal. Lubricating oils, benzine, naphtha, paraffine and corazine, all valuable articles, are extracts from petroleum; and upon reference to the commercial reports it will be seen that the trade in them is quite extensive. The importation of kerosene is one of the immense drains of gold and silver from this State to the East, causing a continual scarcity of money and rates of interest higher than in any other part of the world. Millions go to the East to pay for petroleum, whilst we have a superior article in abundance at our very doors.

As we are satisfied that these deposits of petroleum exist in San Fernando in large quantity and as we have the most approved material and machinery for obtaining and refining it, we trust the company now being formed will meet with proper encouragement from the capitalists of this city and State, whose aid will be needed in procuring the means for the full development of the property which bids so fair to secure from our own resources this important commodity, and thus assist in keeping an equivalent money value at home.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, (A. M.)
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, Feb. 24, 1872.

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A Good Act.

The Senate with but seven negative votes passed the Act for the Encouragement of Agriculture, appropriating \$5,000 to the State Agricultural Society, \$2,000 to each of the District Societies, and \$2,000 to the California Wine-Growers' and Wine and Brandy Manufacturers' Association, for the purpose of paying premiums on the various products of industry. The Senate in this Act have truly reflected the wishes, and served the best interests of the people. There is no surer way to promote the prosperity of a State than to encourage the producing classes and to aid the industries. Such legislation is the true system of favoring and elevating labor, the true way to invite the laboring classes to the country to engage in independent and productive industry. This act alone, if it shall become a law by the vote of the Assembly and the sanction of the Governor, as we have no doubt it will, will do more for the laboring classes and the industries of the State than all the eight-hour laws that can be passed. In fact, give us laws founded on the principle recognized in this act, and we guarantee that eight-hour laws or any others regulating the hours or prices of labor will become unpopular and inoperative. Let us so legislate as to induce labor and proprietorship to unite in the same individual, and all social and labor and capital questions will settle themselves.

SAN FERNANDO PETROLEUM.—Large quantities of crude Petroleum are already coming forward from the San Fernando Oil District. Two shipments have already arrived in this city, one of 100 barrels, and another of 150, by steamer Kalorama, on Saturday last. Some 150 barrels more, at last accounts, had been collected at the springs and were awaiting shipment. A strong company, with abundance of capital, has recently been organized in this city to thoroughly develop and utilize the oil deposits of this district.

SWEET POTATOES.—A communication from J. S., of Monterey Co., on the growing of sweet potatoes, received too late to be answered this week.

Clearing Land of Bushes.

EDS. PRESS.—Your excellent paper needs no commendation from me, it shows for itself. It is exactly what every farmer should have, because its columns contain information of great importance, both in farming and stock-raising. One query I wish you would answer through your columns, if you please, and oblige me. In clearing ground I have often heard it said that at a certain season of the year you cut down young oak and willow and it—the entire root—dies. I wish some reader of the PRESS would give me a definite answer as to the fact of its destroying them, and the time to cut them. J. S. W. Lakeport, Feb. 8th, 1872.

I remember well, when a boy of 14, and a resident of New England, of hearing it said, that cutting bushes three or four inches from the ground during the "old of the moon in August," would effectually kill the roots. Twenty years of farming experience in Michigan, in which the experiment was repeated almost annually, convinced me that the "old of the moon," had nothing whatever to do with it; but that if bushes or trees are cut any time from the 15th of August to the 10th of September, nearly every one of them will die. We say *nearly*, because we found here and there one it did not seem to kill; but which was owing, probably, to some small, low shoots that escaped the cutting, these being sufficient to keep alive and renew the vigor of the root.

The rationale of the effect usually produced, seems to be this; that at the season mentioned, almost all deciduous trees and bushes have completed their annual growth, and in most trees, the terminal bud, as it is called, in distinction from the side buds of the limb, is fully and definitely formed. This bud always determines the end of the growth for that season; though the branch or limb may thicken up somewhat, it does not grow any longer. When this has occurred, it would seem that the tree or bush had in a measure exhausted itself, in its effort at reproduction or adding to its growth, yet still supplying a large quantity of juice or sap, for the consumption of the leaves and the solidifying of the new wood. If at this time we deprive the roots of the benefits afforded by the tree's foliage, in the elaboration of the sap still supplied by the roots, the result seems to be a congestion of the sap in the roots, for want of circulation, the effect of which is, in almost every instance, to kill them entirely. To strip a tree of every leaf it may have at that season of the year, will almost as certainly kill it as though the whole top was cut off at the ground, while if deferred one month later, very few trees would be much injured.

Camphor Tree Seed.

EDITORS PRESS.—Having lately received a box of Japan camphor seed, would like to inquire as to the best manner of planting, the after treatment, cultivation, etc., etc.

In answering the above, you will oblige a constant reader of the RURAL. J. P. B. Marengo Ranch, Feb. 6th.

We know not where "Marengo Ranch" is situated, but if out of the range and sweep of the Golden Gate or cold ocean winds, almost any warm valley or hillside soil in California, where the orange will succeed, will furnish a proper exposure for the growth of the camphor tree. Plant and cultivate in a moist, sandy soil, treating the seed just as you would orange seed, either in garden or nursery ground, or if in a climate like San Francisco, in pots under glass, and when one year old remove them to their final position.

The tree is one of the laurel family, the resin or gum will not exude from an incision as with the conifers, and hence the necessity of destroying the tree to obtain the camphor, which is done by chopping up the tree, limbs and leaves into chips and boiling them in water. If the purpose is shade or ornament, transplant to the place desired, but in a deep, rich soil, and cultivate the same as the orange, and you will obtain a tall, opened limbed tree with smooth, glossy limbs and leaves somewhat resembling the sassafras, except that it is an evergreen.

Almonds—Sacramento Red Lands.

EDITORS PRESS.—In your issue of a few weeks ago you spoke of the red lands near Sacramento, as being well adapted for the grape. Will you please inform me if the same land will equally as well grow almonds, walnuts and the gum trees, and if so, whether they would require irrigation. By answering through the PRESS you will much oblige SUBSCRIBER. Sacramento, Feb. 14th.

From the knowledge we have of these lands and the fruits we have seen produced therefrom during the last three seasons of comparative drouth, we have no hesitation in saying that but few soils can be found in the State better adapted for general fruit culture than these same red lands; but it is our opinion that in all very dry seasons, almost all the fruits and nuts would be increased in size by a judicious, but not excessive irrigation during early summer. The flavor of the fruits, including grapes, might not be improved, but in size they certainly would be, and to make a perfect market fruit both of these points are essential. The Blue Gum would make a fair growth after the final setting in place, even without irrigation, we think, but we are not aware of any experiment having been made that will possibly bear us out in our opinion.

We are confident it would be excellent land for almond growing, because it is not the flesh of the fruit, as with the peach, that we want; but it is more especially an early spring—because almonds are the first trees to show their blossoms in spring—exemption from late spring frosts, with a long, warm season for the perfection of kernel. The trees would not attain to as great a size, so soon, as upon river alluvium, unless irrigation was resorted to. These lands do not seem to be the natural home of the California walnut, they being more generally found in the alluviums near the banks of the rivers, and in some of the small, moist mountain valleys. We would not hesitate, however, having the land, to plant a few acres even, of the English walnut.

Wheat Sowing.

EDITORS PRESS.—I wish some farmer to tell me whether it is possible to put in grain with a common harrow so that all the grain will be covered and sufficiently deep to prevent larks from pulling it up. If it can be done, please tell how. Last year I sowed wheat on loose, sandy soil, harrowed both ways, and ran a drag or float over after the last harrowing. The seed seemed to be all covered. A rain fell within one or two days afterwards, and the earth seemed to settle and leave the grain on top. This season sowed again (wheat) on the same land, ran the harrow over once, after that a light brush to smooth the surface; grain seemed all covered, but rains came, and behold the wheat is nearly all on top, and what is covered is so shallow that birds will pull it up. I think I shall have to sow again. Am confident that I lose one half the grain I sow.

Would thank any farmer who will tell me how to remedy the evil complained of. Plowing here is all done with single plows, the grain sown by hand, and partially covered by harrows. I sow about sixty acres in wheat, and am confident that I waste enough seed on that amount of land to sow twice as much, and my grain is always to thin. E. S. Linn's Valley, Feb. 10th.

The very best, if not the only remedy for the difficulty named, is to sow with a driller. It covers the wheat at a more uniform depth than by any other process; is nearly as rapidly done as broadcast sowing, and no seed is lost by exposure upon the surface, if rains do occur before the wheat has taken root. It is altogether the most economical seeding, and always satisfactory where the surface of the land is free from large lumps or stone. A method next best to drilling is to plow and harrow the land smooth, sow broadcast and follow immediately with a gang of seeding plows; small plows set in a frame and gauged to run about three inches deep. And leave the ground unharrowed. There will be but little loss of seed by this method, as it is covered more uniformly deep than by broadcast sowing and harrowing; but the only perfect method is by drilling. Grain drills that will last for years, can be procured of all our large agricultural implement dealers, in Sacramento, San Francisco and Stockton, at prices depending on size and quality of machine. See their advertisements in the RURAL PRESS.

RECEIVED.—White & Bauer, newsdealers of this city, have kindly favored us with copies of Australian papers of the latest dates; the Auckland, (N. Z.) Weekly Herald; the Melbourne Australasian; the Sydney Mail and New South Wales Advertiser.

Sacramento Farmers' Club.

Beet Sugar Under Consideration.

Aiken—I noticed that Haynie in his excellent essay on this subject, stated that beets raised on alkaline lands for two or three years in succession, effectually reclaim the land and renders it sweet and valuable for other crops. Lest silence on this subject shall be construed by the public as an endorsement of the proposition by the Club, I desire to say I do not agree with it. While it is true that beet growing in alkali soil does absorb more or less of the alkali, this is only a temporary relief. The alkali veins lie deep in the soil and as the surface salts are exhausted by the beets, that below rises and supplies the place of that removed. I believe there is but one way to reclaim alkali soils—draining by blind ditches. In this way it can be done.

Haynie—I stated what I believed and still believe to be a fact. I believe that three successive crops of beets on the worst alkali soil will reclaim it so that any crop of grain may be successfully raised upon it. I have no faith in reclamation by ditching. I have a ditch on my place running through an alkali patch and though it has been there for years I cannot see that it does any good.

Harbison—I agree with Aiken—that drainage is the best method of reclaiming alkali soil, do not believe that any crop or number of crops of beets will effect a permanent reclamation—the alkali will soon rise to the surface again.

Greenlaw—I think beets are to a certain extent absorbers of alkali—perhaps not permanently—alkali exists in streaks in the soil. Wells but little distant apart show this. The water in one will be sweet and in the other brackish and sour—containing lye. This is also a proof that the salts are deep down.

Haynie—Has any one reclaimed alkali soil by ditching? I have facts to support my assertions. On a piece of land that was so full of alkali that grain would not germinate, but rot at once, I raised three crops of beets and then sowed it to oats and harvested a good crop. But this is a side issue. We were on the subject of beet sugar culture. I am fully convinced that there is no other business so profitable for the farmers to enter upon as raising beets and making sugar. Let them associate together and put up sugar factories, and with good management success will surely follow.

Aiken—Haynie calls for proof. I will state that I once owned a farm on the Sacramento river in the southern portion of the county upon which there was a low piece of land so full of alkali that it would not raise anything. I ran a couple of ditches through it and the water that drained out of the soil ran off in these ditches was so full of alkali that it was as black as your hat. After a year or so he plowed it and produced a good crop of beets and continued to cultivate it successfully in different crops thereafter.

J. Johnston—I agree to a certain extent with both theories. I would drain my alkali soil and raise beets on it and thus render it profitable and at the same time relieve it of the alkali salts.

The Secretary—the 30 minutes allotted to this discussion have expired and the essay of Dr. Manlove on the best varieties of grapes for special purposes is now in order. The Doctor read an excellent Essay, recommending the White Muscat of Alexandria, as the best grape cultivated in this State, being a good table grape, good raisin grape and good for wine and brandy and for shipping East. The Black Hamburg he gives the second place, as a good table grape, good because a very profitable grape to cultivate.

The Flame Tokay is unquestionably the best grape for shipping to a distance. It is also valuable to mix with other varieties to give flavor to wine.

James Rutter of Florin, read an essay on fruit culture on the red land, in which he claims that the lands about Florin are much more valuable for fruit and grain than those on the river bottom. The water being within six or eight feet of the surface and there being a hard pan about three feet down. With wells bored and windmills, there was no trouble in securing plenty of moisture in the driest of seasons. Fruits of all kinds and especially grapes raised on the red lands were better, more crisp, sweeter and higher flavored than those raised on the river bottoms. In planting trees and vines, if care was taken to dig the holes large and deep enough and then bore through the hard pan, it is his opinion that no irrigation would ever be required, the roots would then go through the bored holes and always find water.

Haynie—I am somewhat disappointed in Rutter's essay. He has made a strong argument in favor of the red land, but I had hoped he would have given us the process by which he produced such magnificent grapes as he always brought into market, and he had not seen fit to do so.

J. I. Johnston—Both essays were good, and Rutter's had the desired effect to call attention to the value of the red lands for fruit and other purposes.

Wm. Johnston—I own land on the river bottom, and for fruit culture or any other purpose

I challenge any land in the State to excel it. Grapes are raised on the river equal to any in the State, and the Sacramento river peaches are more sought after and command higher prices in the San Francisco market than those from any other locality. Our fruit is all produced without irrigation and this is decidedly in its favor.

Rutter—The cap has been put on the head though it seems to set uneasily. I will tell you how I excel in grape culture at another time.

The next subject for discussion is the "Reclamation of Alkali Soils."

The Growth of Plants.

EDITORS PRESS:—In your issue of February 3d you tell us "How plants derive their distinctive properties."

You state that the fibre of the root alone determines the quality of the juices of every plant. As I have been taught to believe that the leaf was the chemical laboratory of the plant, I will give an argument or two for believing so.

There is no essential growth in a plant until leaves are formed; whereas, if growth depended alone on the root, it might continue during the winter when leaves are wanting or dormant. It has been ascertained that colored water given to the roots of some plants, ascended rapidly to the top of the plants without change. It can be shown that the juices upon which a plant depends for its growth, come from above. If we girdle (or remove a small section of the bark) the lower part of a limb of an apple tree early in the summer, the girdled limb will live two or three years. It will be found that the portion of the limb above the girdle will have increased in size, but below the girdle there will be no growth.

It is probable then that the root supplies food in its crude state, for the plant, which passes up through the albuminum to the leaves, where it is subjected to the process of assimilation according to the peculiar and distinctive characteristic of the leaf. It is then sent back in the liber or inner bark, and affords proper nourishment to the plant.

On the approach of winter there is an extra supply stowed away in the inner bark for use the next spring, until leaves are again developed.

Feb. 7, 1872.

We agree with our correspondent in his views regarding the circulation of sap in trees. As long ago as—a full half century—when Knight made his elaborate investigations of the circulation of sap in vegetables, he determined that in nearly all perennial trees the sap or juice was absorbed or taken up from the soil by the spongioles of the roots, and conveyed through the albuminum or soft part of the wood—called the sap, in distinction from the heart wood—to the buds and leaves; here it is elaborated and made fit for the tree's increased growth, and in its descent, which is always between the liber or inner bark, and the wood, a new layer or concentric ring or cylinder of new wood is produced therefrom. But any one who will take the trouble to taste this return sap between the bark and the wood in the maple tree, will find it extremely acrid and bitter, whilst the ascending sap in the albuminum is sweet and pleasant to the taste.

Our correspondent's remarks on the increase of the size of girdled limbs, are very correct, and show conclusively that the increase of wood is derived solely from the descending sap. But we are sure also that trees are deriving nourishment without growth from their roots and through the trunk and limbs during the winter, even when there are no leaves; for we have only to cut off a limb and hang it up near where it grew, though the butt end be waxed and all escape of sap prevented, we know how quickly it will dry up. Thus it will be seen that our views when properly understood do not differ widely from those of "W. M.," and even if we did differ somewhat, we are pleased with his criticism, and invite a continuance of the same, as well as his views upon any and all subjects that he may be pleased to favor us with.

GOOD STOCK—WHERE TO BUY IT.—By reference to the advertisements of Robert Beck of Sacramento, W. C. Myer of Ashland, Oregon, William Blanchard & Co., San Francisco, N. Gilmore, El Dorado, El Dorado county, and others in our advertising columns, any one wanting good horses, cattle, calves, sheep and cashmere goats, can find them. We have many inquiries and can only refer to our advertising columns.

THE WINE INTEREST.—This is the heading of an interesting communication on the subject of the testing of wines by agricultural fair committees, annually appointed for the purpose of determining the relative value and qualities of wines. Will give it place next week.

Heald's Business College.

A GLANCE AT A LEADING INSTITUTE OF BUSINESS TRAINING. HOW BUSINESS IS CONDUCTED INSIDE OF A COMMERCIAL SCHOOL. HOW YOUNG MEN ARE FITTED FOR THE ACTIVE DUTIES OF LIFE.

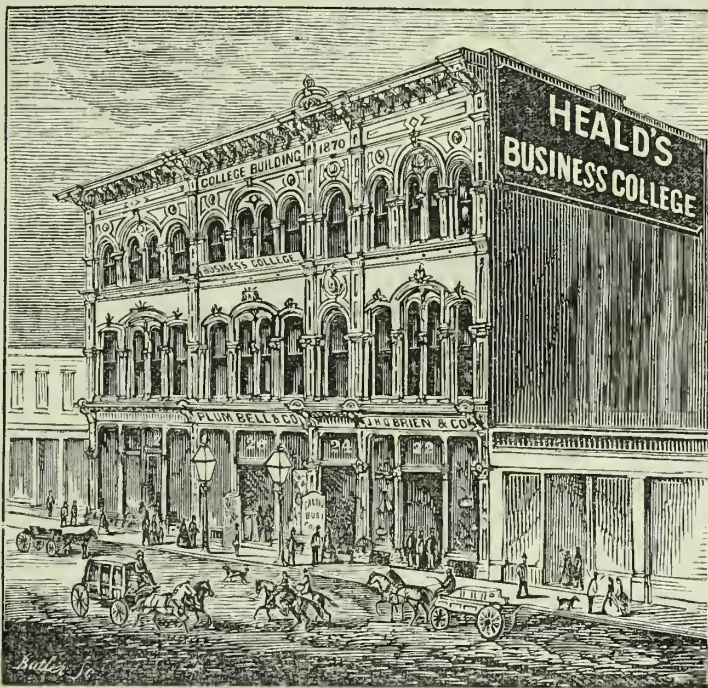
A practical business education is valuable to the farmer, mechanic, artisan and lawyer, as well as to the merchant and banker. In these go-ahead times no person can afford to do without it. For acquiring this, Heald's Business College, 24 Post street in this city—an accurate representation of which is herewith given—by its combined system of theory and practice offers superior advantages.

On entering the institution the student is placed in the theoretical department and receives a daily drill in book-keeping, extending from the simplest to the most complicated forms, business penmanship, commercial arithmetic, orthography, etc. The art of correspondence, political economy, and the application of commercial law to the practical concerns of life, form the subject of interesting lectures and weekly practice. Every effort is made to inculcate into the student's mind the important fact that the foundation of a reliable business education must be obtained in this de-

partment, and that when the foundation is wanting, no amount of mere superficial attainments will insure permanent success.

The offices seem to be complete in all their arrangements and furnished with all the different varieties of instruments in common use. Lines connecting different departments of the college or connecting with the City Hall, fire alarm office, or the Atlantic and Pacific telegraph office, afford the student an opportunity for daily practice with good operators. The recitation rooms are large, well lighted and ventilated. Sessions are held not only during the day but also in the evening. We understand that ladies are now admitted for instruction in all the departments.

The faculty of this College comprises the following well-known instructors:—E. P. Heald, President and Business Manager; F. C. Woodbury, Secretary and Superintendent of Course of Instruction; L. H. Clement and J. D. Blackman, Teachers of Accounts and Penmanship; F. Seregni, Professor of Plain and Ornamental Writing; H. M. Stearns, Teacher of Mathematics and English Studies; A. A. Heald, Assistant



Heald's Business College, College Building, Post Street, Between Montgomery and Kearny.

In Book-keeping; O. Brooks, Superintendent of Telegraphic Department; W. P. Casey, Higher Mathematics and Surveying; R. K. Piotrowski, Modern Languages; and Lloyd Baldwin, Commercial Law.

The number of students now in attendance in all the departments is upward of three hundred. A visit to this institute of business training during school hours cannot fail to be interesting as well as instructive. Visitors are welcome at all hours.

In Memoriam.

DIED.—In Westfield, Mass., Feb. 19th, 1872, MARIA K. WELLER, aged 72 years, widow of Roland Dewey and mother of E. M. and A. T. Dewey, of this State.

Our MOTHER has departed! Her journey of seventy-two years, through the rugged way we all are hastening, has ended. Strong, resolute and dutiful, her life here—the building of her life hereafter—was one of continued labor. Her sweets here have been the recurring harvests of her honest toils and humble teachings. Blessed ever be her memory. Separation may loosen and time lessen the attachment of friend, brother and sister; but age and distance fail to lessen the fondness and faithfulness of a true mother—the ever-loving and watchful heart, whose loss we cannot restore from out the world's vast field of friendship. Passing away through pain that none of less courage could have so patiently endured, we are consoled with thoughts, now, that surely "there is rest for the weary in the sweet fields of Eden."

SALE OF BLOODED STOCK.—In our advertising columns will be found the notice of a sale of fine stock by C. C. & R. H. Parks of Waukegan, Ill., to take place March 13th. It presents a very favorable opportunity for Californians to add new blood to their already excellent herds.

Legislative Agricultural Summary.

Senate.

SACRAMENTO, FEB. 14.—Mr. Tompkins presented a petition from 60 inhabitants of Kern county asking for the passage of a trespass law. Referred to the committee on Agriculture. Mr. Van Ness reported back Senate joint resolution to oppose a reduction of the duty on chicory flour, recommending its adoption. Resolution was adopted. In the discussion that ensued on the passage of the resolution, Mr. Betge, of San Francisco, made a forcible argument, in the course of which he made particular mention of the uses, value and properties of chicory and the necessity of maintaining the duty, to enable California growers of the article to compete with the cheap labor producers of Europe. For the uses and value of chicory see page 393 of last volume of RURAL PRESS.

Mr. Minis offered a resolution and memorial to be transmitted by the Governor to our Senators and Representatives in Congress, asking that government lands among the mountains of California fit only for cattle ranges, be put upon the market at less than the present government price, \$1.25 per acre. That no more than 640 acres shall be located in one body at not less than 25 cents per acre, and that the person so locating shall make affidavit that the same is wanted for stock and grazing purposes. The bill was referred.

FEB. 15.—Mr. Maclay introduced a bill for the encouragement of silk culture. It proposes to offer premiums for California marketable cocoons—for each 100 pounds for the year 1872, \$25; for 1873, \$20; for 1874, \$15; for 1875, \$10; for 1876, \$5. Those raising cocoons for premiums must notify the County Judge of the county where they reside, who must weigh the cocoons and send samples to the board of examiners.

Premiums for manufactured silk—first 1,000 pounds of silk threads, \$2,500; on first 5,000 pounds, \$5,000; of ribbons, for the first 1,000 pounds in pieces of from one to seven inches in width, \$2,500; the first 5,000 pounds, \$5,000; broad dress goods, first 100 pieces, no less than 50 yards in length, and no less than 20 inches in width, \$10,000; first 500 pieces, \$15,000; for the first 5,000 pounds of spun silk, \$10,000; which bill was referred to the committee on agriculture.

An act for the protection of fish in the waters of Butte Creek in the county of Butte, was passed.

An act for the protection of game in El Dorado and Placer counties, engrossed.

An act to encourage agriculture by giving to the State Society \$5,000; to the Bay District Society \$3,000, and to each of the eight District Agricultural Societies \$2,000; was read. An amendment allowing \$2,000 to the California Wine Growers' and Brandy Manufacturers' Society, was adopted.

Mr. Tuttle said that his observations had convinced him that the agricultural societies had produced no good results. Mr. Larkin believed this to be a good object upon which to bestow any aid that could be legitimately extended. Bill passed 28 to 8.

An amended act to restrict the herding of sheep, ordered engrossed.

The Governor approved an act to prevent the capture and destruction of mocking-birds in this State.

Assembly.

FEB. 14.—Mr. Chalmers introduced a concurrent resolution on the distillation of wines. The preamble recites that the grape growing and wine interest of California, is now the third most important branch of agriculture in the State; that though in its infancy, it already embraced a permanent investment of over \$30,000,000 capital, and if fostered and encouraged, and not opposed by adverse legislation, bids fair to exceed any other agricultural interest in the State, within three years. The resolution asks Congress for a modification of the workings of the Internal Revenue laws, as applied to fruit distilling, etc. The Governor approved the bill to encourage the destruction of squirrels and gophers in Napa, Los Angeles, Merced, San Bernardino and Santa Cruz counties. The Assembly passed an act to prevent the spread of Canada thistles in certain counties.

FEB. 15.—Committee reported adversely to the bill to encourage the production of ramie in California.

Committee reported favorably the bill to encourage the destruction of gophers in Alameda county.

A resolution was passed extending the time of payment on public lands, in view of the fact that the drought of the last two years, had crippled a large number of the actual settlers in the foothills of El Dorado, Placer, Calaveras and the eastern portion of Sacramento county.

THE FLOODED ISLANDS.—We have received reliable information from the inhabitants of the delta islands assuring us that the breaks in the levees are all closed, that the water is being rapidly drawn off through the flood gates, and that but a few days more will be required to fit the land for the reception of crops. The residents of Sherman, Twitchell and Grand Islands are consequently all right, and jubilant with the coming summer's prospects.

Farmers, write for your paper.



The Farmer Feedeth All.

My lord rides through his palace gate,
My lady sweeps along in state,
The sage thinks long on many a thing,
And the maiden muses on marrying;
The minstrel harpeth merrily,
The sailor plows the foaming sea,
The huntsman kills the good red deer,
And the soldier wars withouten fear;
But fall to each what'er befall,
The farmer he must feed them all.

Smith hammereth cherry red the sword,
Priest preacheth pure the Holy Word,
Dame Alice worketh broodery well,
Clerk Richard tales of love can tell;
The tap-wife sells her foaming beer,
Dan Fisher fisheth in the mere,
And courtiers ruffle, strut and shine,
While pages bring the Gascon wine;
But fall to each, what'er befall,
The farmer he must feed them all.

Man builds his castle fair and high,
Wherever river runneth by;
Great cities rise in every land,
Great churches show the builder's hand,
Great arches, monuments and towers,
Fair palaces and pleasing bowers;
Great work is done, but here or there,
And well man worketh everywhere;
But work or rest—what'er befall,
The farmer he must feed them all.

Woman's Work.

Elizabeth Stuart Phelps, in an article in the *Independent*, entitled "Rights and Relations," says:

"I think a little reflection will convince us that many, if not most, of the directions in which women now expend themselves, demand as much actual strength as many, if not most, of the departments of what is called 'masculine labor,' though theoretically the light 'afternoon work' of the world falls to them." She says:

"Take a single instance of a conversation I stumbled upon the other day. He that hath ears to hear let him hear its counterpart any day. The speakers were both women.

"'I'm trying to get along without my girl. I had engaged her, but it seems like murder to take her away from Mrs. B.—I haven't the heart to send for her. She's all the help that poor creature can get; and she has twenty boarders in her house to-day, and four little children of her own besides. One's a baby, born last May. She never was a strong woman. She looks like death this summer. I believe she is dying, myself. It's enough to kill any woman. I'm sure I don't wonder. You never saw such a face. It's like a ghost. She isn't fit to have a boarder across her door-step; but she's anxious to do and very ambitious to get along, and they're poor, you see.'

"'But where is her husband?'"
"Oh! he keeps the tin-shop down town."

"'Why doesn't he support the family?'"
"Well, you see, he's just beginning; and he doesn't make it very fast, and it's a growing family. She feels as if she must help, anyhow."

"'Help? It seems to be *he* that only 'helps.' She supports the family. Why don't they change work, if she is killing herself with hers?'"

"'What?'"
"Why doesn't she learn the tinsmith's trade; and he learn how to keep twenty boarders, and take care of four children, with one ignorant assistant? If he is a strong man he could probably bear it awhile. At any rate, it might save her life, if it is not too late."

"'Oh! well,' with a puzzled laugh, hardly sure whether the speaker expected some recognition of an original joke, 'women can't do much unless it's housework, you know—especially mothers; they're not strong enough, I think!'"

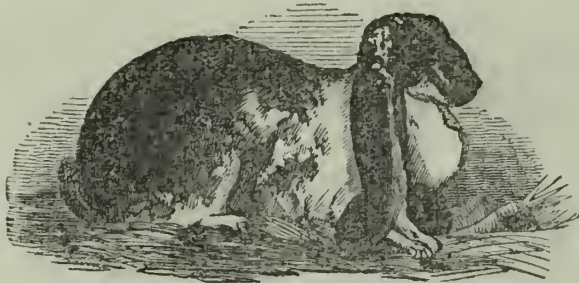
GOOD ADVICE.—Don't be discouraged if occasionally you slip down by the way, and others tread on you a little. In other words don't let a failure or two dishearten you; accidents will happen, miscalculations will some times be made, things will turn out differently to our expectations, and we may be sufferers. It is worth while to remember that fortune is like the skies in the month of April, sometimes cloudy, and sometimes clear and favorable.

Lop-Eared Rabbits.

Among the most beautiful and largest of the varieties of rabbits may be classed those dominated "lop-eared," from the peculiar growth and appearance of their ears. The accompanying illustration presents a very correct view of one of these curious little animals, whose auricular appendage is very advantageously shown, but not at all exaggerated.

By some they are called "Madagascar," by others "Spanish," as though they might have originally come from Madagascar or Spain; but we have no evidence that such was the fact, as it is generally agreed that the true origin of the variety is enveloped in obscurity.

Most naturalists are agreed that the variety is not one of Nature's productions; but that it is "a work of art." Nature can hardly be accused of providing such a useless and indeed such an embarrassing appendage. Reason cannot teach that members so useful to the animal as the great upright ears of the wild rabbit, in enabling it to hear and escape from its enemies should be so completely changed by natural selection to a covering and hindrance to the essential part of that organ. Nothing but the arts or whims of men can be supposed to have produced such a result, and that only by careful breeding—causing perhaps a naturally diseased or deformed ear, to become at first weaker and weaker—to lop more and more—and to grow, in successive generations, longer and broader—more silky and soft—until we



A LOP-EARED RABBIT.

finally have the really beautiful deformity which is now presented by the best specimens of this interesting little pet.

In measuring the ears of the animal the rule is to stretch their tips as wide apart as possible without hurting, and then measuring the distance between. The width of the ear is also considered almost as essential as the length. The fineness or silkiness of the texture and fur is also regarded as an important point. A tortoise shell color is considered the most desirable; the largest size is also regarded as preferable.

These animals are held in great esteem as pets in England, where Rabbit Shows are frequently held (as well as cat shows), and where the desirable features are carefully secured. At one of the recent shows of this kind in Kent county, numbers of rabbits were exhibited with ears measuring over 20 inches from tip to tip, and one which measured 22½ by 5½ in width. That animal was 3½ years old and weighed 7 lbs. 6 oz.—color yellow and white.

A Beautiful Chemical Experiment.

The following beautiful chemical experiment may easily be performed by a lady, to the great astonishment of a circle at her tea party: Take two or three leaves of red cabbage, cut them in small bits, put them into a basin, and pour a pint of boiling water on them; let it stand an hour, then pour off the liquid in a decanter. It will be of a fine blue color. Then take four wine glasses; into one put six drops of strong vinegar, another six drops of solution of soda, into a third the same quantity of a strong solution of alum, and let the fourth glass remain empty. The glasses may be prepared some time before, and the few drops of colorless liquids which have been placed in them will not be noticed. Fill up the glasses from the decanter, and the liquid poured into the glass containing the acid will quickly become a beautiful red, that in the glass containing the soda will be a fine green, that poured in the empty one will remain unchanged. By adding a little vinegar to the green it will immediately change to a red, and adding a little solution of soda to the red it will assume a fine green, thus showing the actions of acids and alkalies on vegetable blues.

As riches and favors forsake a man we discover him to be a fool, but nobody could find it out in his prosperity.

A Starving Nation.

The accounts of the famine in Persia, which continue to arrive in greater detail, bid fair to treat the world to the spectacle of a calamity the like of which has not been witnessed in historic times, at least—the sudden extinction of a nation by want of food.

This has really been the fate of the great states, which once filled the valley of the Euphrates, and it is a fate which has for centuries been threatening some modern States—Spain, for instance. Man has stripped the soil of the trees, the absence of trees brought drouths; drouths have slowly diminished the productive powers of the ground, and finally destroyed them—the population, in the meantime, dwindling in numbers and vitality. Spain had forty million of people in the time of the Romans and flowed with milk and honey; it is now an arid region, only one-half of it under cultivation, with only sixteen millions of inhabitants, and, if modern science had not come to its aid, would probably go the way of Babylon.

Persia was one of the most powerful states of antiquity, and even in the fourteenth century was able to support the army of Tamerlane, who marched without commissariat or baggage, during a bloody contest. It is now almost a wilderness, with a population of two millions—about half of them nomads, which is rapidly perishing from famine brought on by three years' drouth. The worst of it is, that owing to the absence of either common roads

or railroads, it seems to be impossible for the charity of the rest of the world to reach the sufferers, so that there is really a strong prospect of the total depopulation of the country.

The moral of this horrible story is—look after your trees.—*New York Nation*.

WHAT IS POETRY?—A smile, a tear, a longing after the things of eternity! It lives in all created existence, in man, and in every object that surrounds him. There is poetry in the gentle influence of love and affection; in the quiet brooding of the soul over the memories of early years, and in the thought of that glory which chains our spirits to the gates of paradise. There is poetry, too, in the harmonies of nature. It glitters in the wave, the rainbow, the lightning, and the stars; its cadence is heard in the thunder of the cataract; its softer tones go sweetly up from the thousand voice-bards of the wind, the rivulet and the forest; and the cloud and the sky go floating over us to the music of its melodies. There is not a moonlight ray that comes down upon the stream or hill, not a breeze calling from its blue air, thrown to the birds of the summer valleys, or sounding through midnight its low and mournful dirge over the perishing flowers of spring—not a cloud, bathing itself like an angel vision in the rosy blushes of autumn twilight—nor a rock glowing in the yellow starlight, as if dreaming of the Eden land, but is full of the beautiful radiance of poetry. Heaven is quickened by its spirit, and even the heavings of the great deep, in the tempest and calm, are but its ascent and mysterious workings.

WONDERFUL MIRAGE.—The most beautiful mirage ever witnessed from Santa Cruz appeared in the heavens over and beyond the light-house at Monterey, on Thursday morning, the 18th. At 8 o'clock in the morning the pines on the point were made to appear about three hundred feet high and so clearly defined as to be easily counted; the view frequently changed; at one time a series of perfect castles with towering minarets appeared too real for an illusion; again changing, there appeared a perfect fort of vast dimensions; thus the scene varied until the illusion changed, and presented light-house, pines, and other objects in the heavens upside down. Mirages of less note have frequently appeared at this point, but we doubt if ever a more perfect mirage appeared on this coast.—*Etc.*

YOUNG FOLKS' COLUMN.

Names and Order of the Books of the Old Testament.

The Great Jehovah speaks to us,
In Genesis and Exodus;
Leviticus and Numbers see,
Followed by Deuteronomy.
Joshua and Judges sway the land,
Ruth gleams a sheaf with trembling hand;
Samuel and numerous Kings appear,
Whose Chronicles we wondering hear;
Ezra and Nehemiah now,
Esther the beauteous mourner show;
Job speaks in sighs, David in Psalms,
The Proverbs teach to scatter alms;
Ecclesiastes then comes on,
And the sweet songs of Solomon;
Isaiah, Jeremiah then
With Lamentations takes his pen;
Ezekiel, Daniel, Hosea's lyres,
Sweet Joel, Amos, Obadiah's;
Next Jonah, Micah, Nahum come,
And lofty Habakkuk find room;
While Zephaniah, Hagar calls,
And Zachariah builds his walls;
And Malachi with garments rent,
Concludes the ancient Testament.

Grandma's Fortune Telling.

"Now, what mischief?" said grandma, smiling as she entered the room, and found the children huddled together by the book-case, evidently trying to cover up what they were about:

"Lizzie's telling fortunes!" said little black-eyed Nell, looking up brightly.

"Ah! that's it, is it?" said grandma, taking out the big knitting pogs and a huge soft ball of crimson wool, which seemed to grow fast under her fingers, into a warm, gay tippet for some of the small folks.

"Well, come and sit round the fire, and let grandma tell fortunes for you. She's a master hand at it."

"Why, grandma," said the children, coming forward, "we were afraid you would think it was not right."

"Well, I do not approve of common fortune telling, but my kind will do no harm. It does not require a tea cup, nor do I need to look into your hands. Still, I saw the direction in print once. To begin with Lizzie: If a little girl with blue eyes, auburn hair, a quick mind and nimble feet and fingers, will use her eyes and mind well in getting a good education, and employ her feet and fingers in useful work such as helping mother about the house, and taking plenty of exercise out of doors with little brothers and sisters; if she keeps her rosy lips from ever pouting, and strives to love and obey God every day, she will be very likely to have a long and healthful life, to make a great many people happy by it, to be good looking in everybody's eyes, and to be loved and respected everywhere as a sensible, excellent woman. Now, could anybody make out a better fortune than that for my little granddaughter? Every word of it is true, too, while most fortune telling is only falsehoods put together.

"Now, Georgie, if a boy with black hair and eyes, will learn to master his temper well, so that ever so great provocation cannot make him angry, he will gain a greater victory than Gen. Grant did at Vicksburg even. If he will study his books hard, and learn to be very accommodating at home when he is asked to do anything, everybody will look on him as a sensible boy, and love him for his obliging ways. It is the polite, civil, people who make their way best in the world. Try and see if you do not find it so.

Now, if a little black-eye four year old, like Nellie here, will run to grandma's room, and bring the black silk work bag, which hangs on the chair back, I should not wonder if she or her grandmother should find enough almonds and strawberry candy to treat all this little company."

Very merry were the children over grandma's fortune telling, and little Nellie insisted that her's was the best of all.

It had this peculiarity, that it applied just as well to children whose eyes and hair were of any other color. So you can apply it dear children, if you will, and I know you will find it will come true.

Conundrums.

What most resembles half a cheese?—*The other half.*

When are nuts insane?—*When they are cracked.*

Why dose the eye resemble a severe schoolmaster?—*When it is cross.*

Why is a dislocated wrist like an extinguished fire?—*When it is put out.*

DOMESTIC ECONOMY.

The Art of Folding Linen.

Though washing machines, wringers, and various new kinds of soaps have greatly lessened the labor of washing, nothing has yet come into general use which does away with the old-fashioned laborious system of ironing. There may be mangles and things of that sort, which lessen the labor, but they are not common. To be able to iron nicely is a great accomplishment, and every young lady should know something of it. The wheel of fortune is so constantly turning, that even the highest cannot tell how soon she may be glad of a little household skill in the matter. However neatly a garment may be ironed, the effect is spoiled if it is not also neatly folded. Teach the little girls this in their first attempts at ironing, and they will remember it all their lives. Let the hems of handkerchiefs, pillow cases, and the like, be brought together with mathematical nicety, and then the folds carefully pressed down.

The old town of Anjou was once most remarkable for its folding of linen. It seems a little thing to distinguish a place, but one who had once witnessed a display of the grand old cabinets of its spacious mansions, would be likely to remember it ever afterwards.

It was a great pride of a housekeeper in such an establishment to throw open her great presses and reveal the curious contents. Here would be an immense sheet of heavy linen, shaped like a drinking trough. Around it would be four and twenty sheep fashioned from other linen articles, all with bowed heads as if drinking. At the head stood a tall shepherd folded from some other garment. Windmills, abbeys, towers and castles are very common, not to speak of the lesser articles as napkins and the like, which are folded into beautiful shapes of lilies roses and other flowers.—Country Gentleman.

TO MAKE GRAVY THAT WILL KEEP SEVERAL DAYS.—Lay in a stew-pan or suitable vessel half a pound of lean, juicy, fresh meat of the poorest pieces or trimmings; over this put half a pound of pickle pork, or a little less bacon of the side meat. Cut up two medium-sized onions and a few sprigs of parsley. Pour into the vessel a tumblerful of boiling water (not more than this;) cover the vessel, and let the meat stew, turning it once, until it is a rich brown color; then pour in boiling water enough, to just cover it; let it simmer an hour; remove the meat; thicken the gravy slightly with a paste made of brown flour and water; let that simmer half an hour; add any essence of ham or good gravy that may be saved for such purposes. Put in an earthen vessel well covered, and exclude from the air. Warm it before serving; season with any catsup liked. For making all brown gravies, fry the meat first, and pour over hot broth, gravy, or water; use the browned sugar or flour for coloring the thickening. Kidneys, livers, necks of poultry, the scraggy parts of the necks of animals, may be used for making the stock for gravy.—Prairie Farmer.

SAUSAGE SEASONING.—“As hog-killing time” is now at hand perhaps the following directions for seasoning sausages, taken from a correspondent of the *Rural New Yorker*, may not come amiss: Take fifty pounds of meat, pass it through a meat cutter, spread it out in any convenient vessel, then weigh out ten ounces of salt, four ounces of pepper, and five of sage, pulverized; sprinkle this over your meat and then mix it in a little; then pass it through your cutter, and all is right. Then put up as you choose; or, if you wish, you may use summer savory, or you may transpose the pepper and sage, according to quantity. I have used this formula twenty years, and wish no other. I suppose any novice will know that this preparation will answer for a greater or lesser quantity. If any one has a better recipe let them give it.

BOPS.—One pint of milk, three eggs, one spoonful of butter, four spoonfuls of flour, mix them well together and bake in plates, and in a quick oven. They ought to be buttered while hot, and put one above another, before sent in.

STEPPING ON CHAIRS.—Never step on a chair without first placing a newspaper on it. The trouble is slight and the saving is great.

SYRUP OF COFFEE.—This preparation is of great use to those who have long journeys to make. Take half a pound of the best ground coffee; put it into a saucepan, containing three pints of water, and boil it down to one pint. Cool the liquor, put it into another saucepan, well scoured, and boil it again. As it boils, add white sugar enough to give it the consistency of syrup. Take it from the fire, and when it is cold put it into a bottle and seal. When traveling, if you wish for a cup of good coffee, you have only to put two teaspoonfuls of the syrup into an ordinary coffee-pot, and fill with boiling water. Add milk to taste, if you can get it.

COOKING RABBITS.—Many people admire rabbit roasted whole, except the head. This is best stuffed. While roasting bathe frequently with butter, dredge it with flour, and manage as with any other roast. The head and liver may be boiled. Split the head, take out the brains, mash them with the liver and add to the gravy. Wine and jelly are liked by some people in the gravy. Keep the rabbit in weak salt and water at least twelve hours, if the weather will permit before cooking. We prefer rabbit stewed. It is a daintier dish?

Mechanical Hints.

THE LENGTH OF SASH-WEIGHTS.—The following table, taken from *Leffel's Mechanical News*, will be found useful in the making of sash weights, which, of course, must balance accurately the weight of the sash. The first column of figures indicates the diameter of the round weight or the length of one side of the square weight, in inches and fractional parts of an inch. The other two columns are sufficiently explained in the head-lines. Windows of dwelling-houses and all classes of public buildings are now so generally made with box frames for the reception of weights and pulleys, that the manufacture of the weights is quite an important branch of industry. It is a very troublesome one in some cases, especially where a job of this kind is only occasionally called for, and the workman is obliged to make an intricate calculation for each new size of weight required.

DIAMETER.	LENGTH OF 1 LB. IN INCHES.		DIAMETER.	LENGTH OF 1 LB. IN INCHES.	
	Round iron.	Square iron.		Round iron.	Square iron.
1/2	19.67	15.38	2 1/2	.86	.68
3/4	12.63	9.83	2 3/4	.78	.60
1	8.69	6.85	2 7/8	.70	.55
1 1/4	6.41	5.02	2 9/8	.64	.50
1 1/2	4.44	3.84	2 5/4	.59	.46
1 3/4	3.87	3.03	3	.54	.42
1 7/8	3.13	2.45	3 1/4	.50	.39.3
2	2.58	2.03	3 1/2	.46	.36
2 1/4	2.17	1.70	3 3/4	.42	.33
2 1/2	1.85	1.45	3 7/8	.39	.31
2 3/4	1.59	1.25	3 7/8	.37	.29
2 7/8	1.39	1.09	3 9/8	.34	.27
3	1.22	.96	3 5/4	.32	.25
3 1/4	1.08	.85	4	.30	.24
3 1/2	.96	.75			

To obtain the length of the weight, it is only necessary to multiply the length of one pound in inches by the number of pounds which the weight is to balance.

STONE CEMENT.—Hydrated silica combines much easier with bases than common quartz-sand, (anhydrous silica). On this Professor Boettger has based the employment of infusorial earth, a white pulverulent mass, which occurs in various localities in Europe and in this country, in large masses, as the binding ingredient of an excellent cement for stone-work. He mixes equal parts of infusorial earth and oxide of lead (litharge) with one-half the quantity of hydrate of calcia (freshly slacked lime) and linseed-oil varnish to a homogeneous thick paste, and obtains a mass of extraordinarily great binding power, which after some time assumes the hardness of common sandstone. This cement is applicable in all cases where iron is to be fastened in stone, where artistic stone work, such as fountains, vases, statuary, etc., is to be mended; in short, where small quantities of the binding material are required. For the more common uses of the mason and stone-cutter, this cement is, of course too dear to permit of extended application.

LARGE CASTING.—An immense anvil block, weighing some sixty tons was recently cast at the Washington Navy Yard. This is said to be the largest iron casting ever made in the United States.

Joy is one of the greatest panaceas of life. No joy is more healthful or better calculated to prolong life than that which is to be found in domestic happiness in the company of good and cheerful men, and in contemplating with delight the beauties of nature.

HILL'S PATENT EUREKA GANG PLOW,



The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily hauled. They will plow any kind of soil, and leave the ground in perfect order.

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These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

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This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

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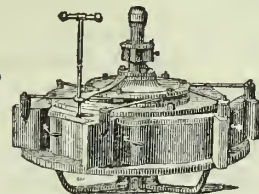
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The undersigned have received, per ships Grace Darling and Marianne Nottebohm, from Newcastle, N. S. W., and offer for sale,

Fifty Merino Rams,

Selected from the best stock of Saxony and French Merinos in Australia. These animals are young and in fine condition and are well worthy the attention of Sheep Raisers. They can be seen at Sweeney's Stock Yards, corner of Howard and Tenth streets, S. F.

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This Company have removed from the corner of Turk and Larkin streets, to their new and commodious works corner of Greenwich and Octavia. They have established an office and salesyard at the Junction of Market and Bush, where they will keep constantly on hand an assortment of ORNAMENTAL, BUILDING, CEMENTERY and GRINDSTONES. Orders will be received at the above office from all who wish to get good work at low prices. Send for Circular. 5v24-3amslamrly

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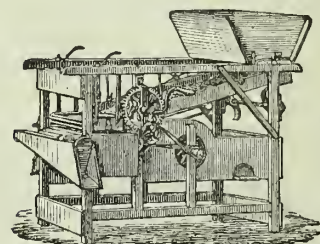
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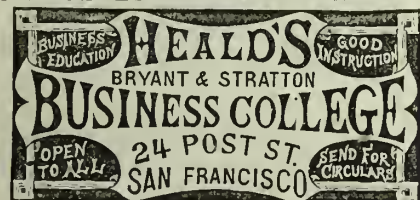
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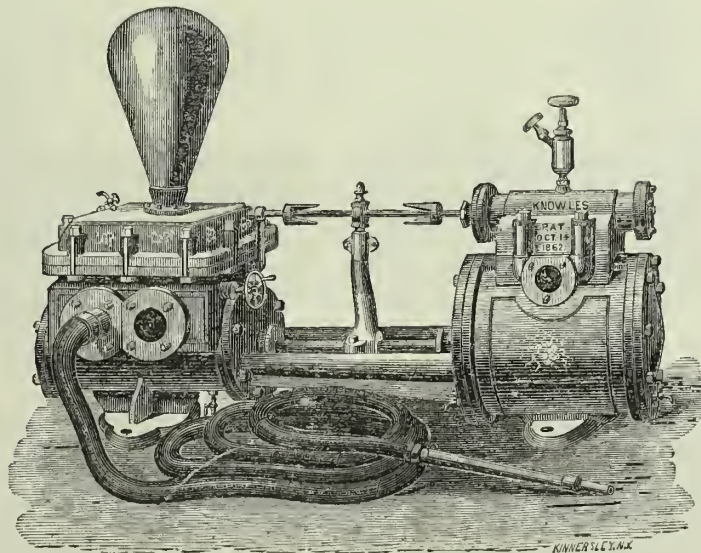
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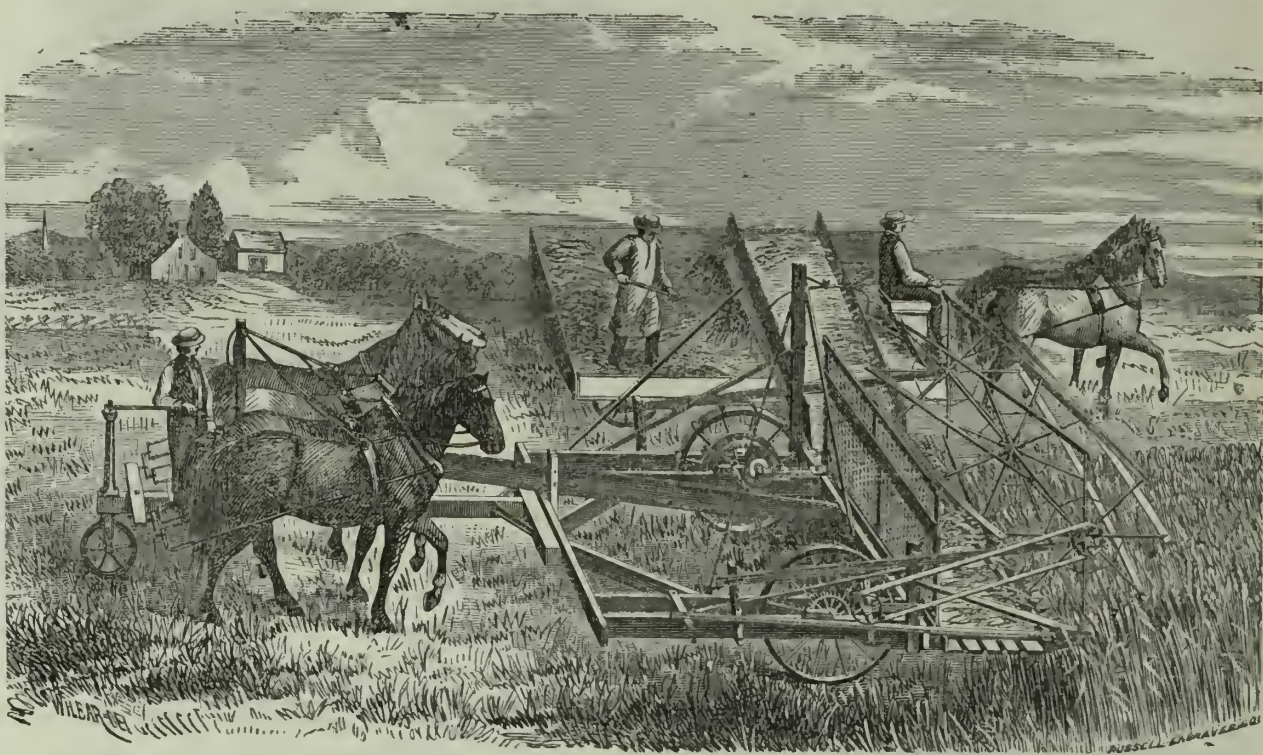
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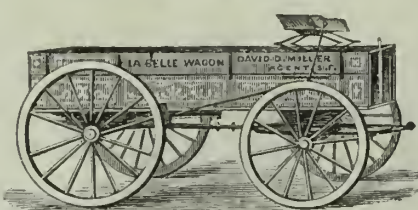
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Manufactured by FARNSWORTH, WOODWARD & CO.,
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All sizes of Wagons with Boxes, Brakes and Spring
Seats, or without. All Wagons are manufactured to my
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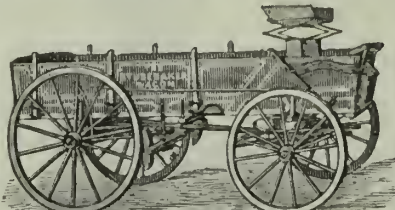
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raising the gang has no equal—a thirteen year old boy
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Have become

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For QUALITY,

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They Have no Peer.

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Of all sizes, with HEAVY TIRES riveted on, always on

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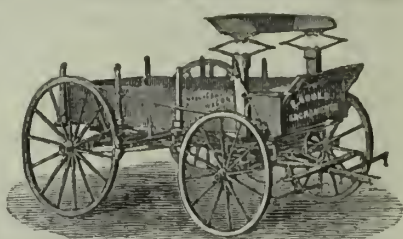
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Do you want to buy
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All orders will receive prompt attention.
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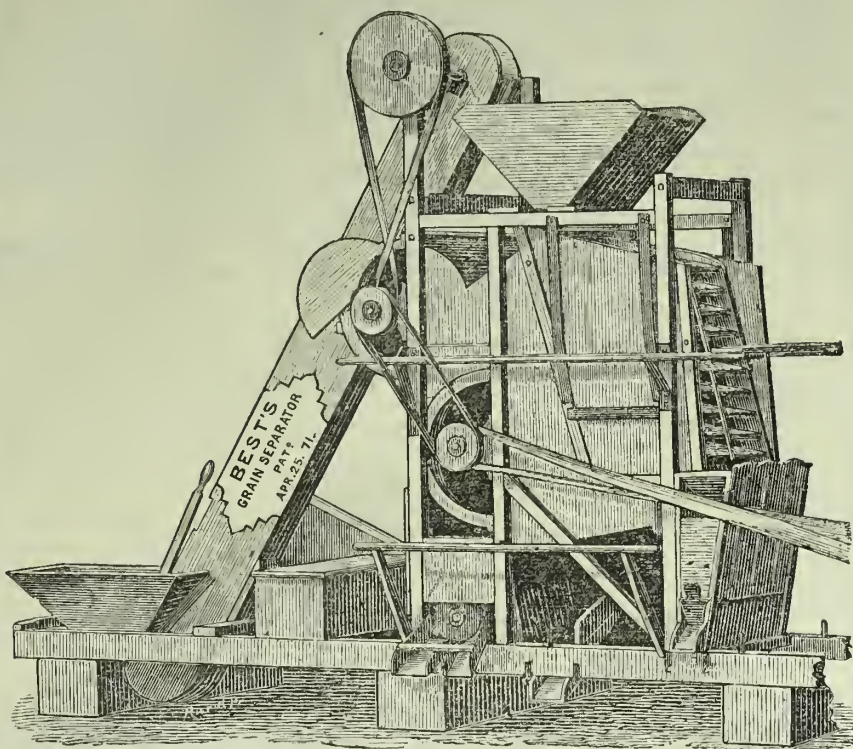
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We wish it distinctly understood (and we mean all we say) that we clean grain that is too foul for the flouring
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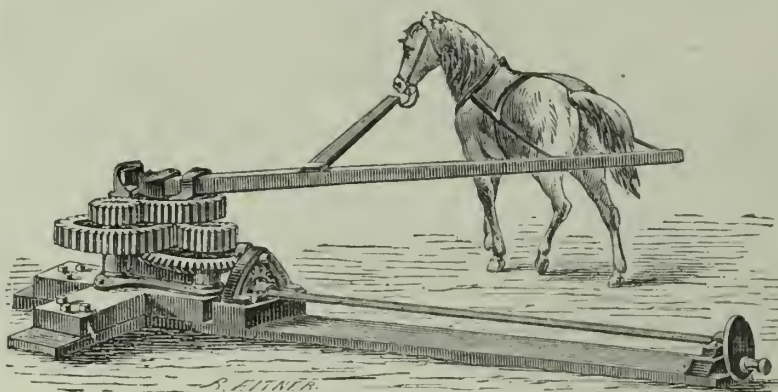
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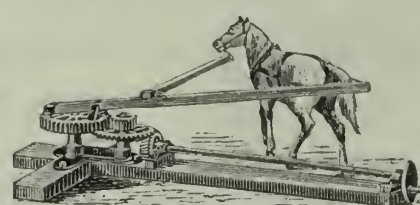
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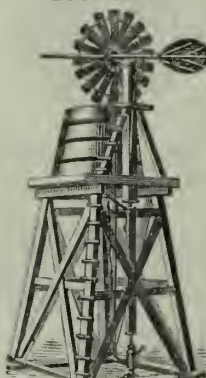
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White-Faced Black Spanish..... 6.00
Houdans—Bearded..... 6.00
Silver Spangled Hamburgs, Imp. from England.. 12.00
All Eggs ordered will be packed with great care, and Warranted True to Name, and Fresh.
Cash Orders filled in rotation. Address
S. B. PIKE, Care Fireman's Fund Ins. Co.,
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R. IRELAND,

The old Pioneer Broom Factory—Established August, '56. No. 82 J street, between Third and Fourth, Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubs and Pails. 16v2-3m

Cattle, Sheep, Swine, Poultry.

Original Breeders of CHESTER WHITE PIGS.
Send stamp for Catalogue. JAS. STEWART & CO.,
4v3-2m Kennet, Chester county, Pa.

Fine Imported Poultry,

CONSISTING OF

Dark Brahmas,

LIGHT

Brahmas,

BUFF COCHIN,

PARTRIDGE

COCHIN

AND

Houdans,

Quaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal. Address
W. FORD THOMAS,
1v3-3m Custom House, SAN FRANCISCO.

CASHMERE GOATS.

All persons interested in the Cashmere or Angora Goat enterprise are requested to meet in Sacramento on Wednesday, February 28, 1872. N. GILMORE.

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,
In quantities to suit purchasers.

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GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry,
Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

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Importer and Breeder of

CHOICE POULTRY.

P. O. Box 659, San Francisco.



TREES FOR SILK!

Mulcaulis,

1 year old, \$20 per Thousand.

Do. 2, 3 and 4 years, \$25, \$35 and \$40.

ALBA AND MORETTO, 2, 3 and 4 years, \$40, \$50, \$60
CUTTINOS of all kinds \$2.50 per thousand.

TREES FOR SHADE!

Finest and Cheapest in the State.

White and Black Mulberry

From 1½ to 3 inches diameter, and 15 to 20 feet high—
from \$25 to \$30 a hundred, or 30 to 50 cents each.

FRUITING MULBERRY!

From 50 cents to \$1.50 each.

Silkworm Eggs and Silk Manual.

Liberal discount to the trade.

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Importer and Breeder of

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GOATS

—OF—

PURE BLOOD

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ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

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NORWAY | Genuine Norway | OATS!
Oats, raised on hill
land, by one of the proprietors of this journal, can be
had at this office.



Volume III.]

SAN FRANCISCO, SATURDAY, MARCH 2, 1872.

[Number 9.

Meeting a Grizzly.

In the early days of California the mountains of the State were infested with those fierce and powerful monarchs of the forest, the grizzly bear, and numberless are the stories current of wild and startling adventures in their search. Those pioneers of civilization, the miners, frequently met them in their prospecting trips, and when prudent, gave them a wide berth; still, some of the more reckless and daring of this adventurous class, sometimes attacked them, and unless well armed and in numbers, were in luck not to come off "second best." As a general thing unless surprised or attacked, they will not act on the offensive; cases are, however, known to the contrary. The growl alone of these beasts, when surprised or wounded, is enough to make a prudent man keep at a respectful distance, and the writer knows from personal experience that at night, in the dark gloom of the forest, with one in close proximity, it will make a man feel queerer, and his hair straighter, and offer superior inducements to accelerate tree climbing than most anything else could.

The miners of California generally went pretty well armed in early times, and in their visits to their neighbors at night were careful to carry their trusty revolvers, and, if possible, a rifle.

This was found necessary for protection against ferocious beasts and still more ferocious men. Our cut represents a "pioneer" returning home at night, and who has taken a short cut home instead of going by the regular trail. His mule, from natural instinct, evinces his knowledge of the proximity of the grizzly by laying back his ears and looking as if he did not like it. The bear is seated in front of his den upon a point of rocks overlooking the placid river, which glistens in the moonlight, and seems to be enjoying himself. The miner will, however, get away safely, for nothing will frighten a mule more or make him run faster than the smell or growl of a bear.

At Shasta the total rainfall for the season, to Feb. 27, foots up 90.27 inches.

Premiums at the Fairs.

We remarked last week that we would at an early day have something to say about premiums at our fairs. As the time is at hand when the several societies should be preparing their premium lists for publication so that those who have an idea of making an exhibition can determine what they will contend for, we will mention a few things on the subject at this time. We have noticed for a number of years

the exhibition in the entire stock department. Retired List.

Another thing in this connection, we would suggest that it would be good policy if when an animal has won the sweepstake prize at the fair of any society, he should be placed on the retired list, so far as the future fairs of that society are concerned, and let others come in for the sweepstake. Let it be one of the conditions of receiving the sweepstake that the animal shall thereafter while owned by the same

instances, the premiums that have been paid to the same animals exhibited in the same classes, and without any competition even, almost pay for the value of the animal each year; and there are some animals in the State for which premiums have been paid until the amount so received by the owner exceeds three or four times the price asked for the animal.

These facts are neither creditable to the society nor encouraging to the stock interests of the State, and we hope some system will be adopted whereby the practice will be avoided in the future.

PLANT TREES.—Although the present season,

on account of continued rains, must be a late one for transplanting trees, it is yet prospectively a very favorable one for their life and growth. We need more trees, in our inland climate especially, and we cannot urge our readers too strongly to set them out in favorable years as fast as they are able to, and if suitable selections, there will be no regretting the time and expense spent in this direction. The Australian gum trees just now have the popular lead in our market, and a single nurseryman offers for sale through our advertising columns 30,000 of the different species in good condition for transplanting. We allude to Jas. T. Stratton, of the "Gum Tree Farm," near Haywards. He has by far the largest plantation of these trees in America—including a growing for-



THE SHORT CUT HOME.

what we consider a great wrong—that the Same Animals

Carry off the first premium in the same classes from year to year. While we endorse the proposition that the best animal exhibited in any class should be awarded the highest premium of this class, we do not believe it good policy for the societies to allow an animal to be exhibited for a premium from year to year for an indefinite period in the same class. After he has won the first premium of the class let him rest upon his laurels or go into some other class, and let others come in for the laurels. This course will encourage the owners of young animals to join the contest for the first prize, and will have a tendency to increase the interest of

party be exhibited at the fairs of the society in the retired or honorary list of stock, but not in competition for any prize that he has already won. Let this rule be adopted at all the District and State Fairs, and when the animals that have won a position on the retired lists at the several District fairs, appear at the State Fair, let them appear with their badges of distinction and come in competition with each other for the sweepstake. We think some plan like this will create a greater interest in the exhibitions, bring out a larger number of stock, and it will certainly answer the purposes of the exhibition, as well as save money to the societies.

We have seen the same animals carry away the first premium in their class from the State Fair for years in succession. In fact, in some

est of over 50,000, for which he was awarded the State premium in 1870. The varying growth of trees in this climate during wet and dry seasons is very peculiarly marked in the annular rings which record the years of its existence.

GRAIN.—The *Alta's* commercial correspondent writing from New York, says the harvests of southern Russia which are coming in, show such unusual deficits, that there will be but little grain for export from what has been one of the chief supply districts of Europe. Nearly the whole crop will be needed for home consumption.

THE yield of wheat for the coming harvest in this State is variously estimated at from thirty millions to thirty-five millions of bushels.

CORRESPONDENCE.

Notes of Travel in San Joaquin County.

[By our Traveling Correspondent.]
Imported Cotswold Sheep.

EDS. PRESS:—It may be interesting to your readers to be posted in the latest importations of the above named sheep.

Mr. W. T. Wilson, a resident of the State of Ohio, arrived in Stockton, on the 13th of last month, with 45 head of the finest Cotswold sheep (full blooded) I think there are in the State; together with one fine buck Angora goat, and one pair of shepherd dogs. Their destination I did not learn, but at present they are stabled at Yates' Sale Stable, Stockton. Mr. W. imported in person last spring or summer, from England, 105 Cotswold sheep, 20 Shetland ponies, 5 Berkshire pigs, several pairs of shepherd dogs, and a lot of fine poultry, to the State of Ohio. The above mentioned are a portion of the same and upon which he took the 1st premium at the Ohio State fair last fall.

Goods to the Interior.

The Stockton forwarding merchants are "as busy as nailors," shipping goods to the interior. Even as bad as the roads have been made by the late rains, Messrs. L. E. Chieard, and J. D. Peters are running to their full capacity.

Side Notes.—New Town.

On the S. & V. R. R., 33 miles distant from Stockton, a new town called Oakdale, has lately sprung up and already 35 houses have been erected. It contains 1 hotel, one livery establishment and 3 stores. Mr. A. V. Twoby is the principal merchant. The town above named is in Stanislaus county and distant about 12 miles from

Modesto.

Which is situated 30 miles from Stockton, via Railroad, and 20 miles southeast of Lathrop. It contains about 500 inhabitants, and is now the county seat of Stanislaus county; changed from Knight's Ferry by a vote of the people. The first session of the County Court was held here in November, 1871. Some enterprising nurseryman could, I think, sell 500 or 1,000 fruit and shade trees in this village, for every other man asked me the question: "What is the best kind, and where are they to be had?" I referred them to your advertising columns for information.

Mr. Cole has added to his capacity in the hotel business, and is doing well. D. S. Husband is proprietor of the Modesto House, and is doing his share of the trade. The Yosemite Stables, presided over by F. H. Ross, furnish everything desirable in the livery line. J. J. McEwen, principal merchant at this place, is postmaster, and among the most accommodating in the State. L. P. MC.

SOLID PETROLEUM.—It is stated in a Paris Gas Journal that Petroleum can be converted into a permanent solid, which will burn without liquefying and may be preserved in a firm mass for any period. The process is not given, and is a secret. Should this prove to be true, the value of the discovery is incalculable; for with petroleum in a solid state it will take the place of coal upon the ocean steamers, and in all manufactories where coal is now used at very great expense. According to the recent reports the experiments made with liquid fuel in Russia have been satisfactory in their results, and prove a saving of 35 per cent. by using naphtha instead of coal. This being true, if the petroleum or its products can be made solid so as to be easily handled, the space occupied by coal on our ocean steamers can be made available for cargo.

SUICIDE BY A HORSE.—A horse in the Railroad Livery Stable, at Chico, according to the *Enterprise*, recently committed suicide by butting his brains out against the iron front of Edgington's building. The only assignable cause for this unprovoked attack upon his own life, is the fact that hitherto he had been one of four horses accustomed to carry Uncle Sam's mails in a stage-coach, but on this occasion, owing to the bad state of the roads he was deputed, with another, to carry them on his back, which displeased his horsheship and provoked him to commit suicide.

MANKIND has been learning six thousand years, and yet how few have learned that their fellow men are as good as themselves.

Irrigation.—Concluded.

[Written for the Press.]

Could the valley lands of this State, be crossed and recrossed with ditches and canals, filled by our mountain fountains, the increase of products would be incalculable and the farm land would at once advance in price a hundred fold. Nothing is more needed than railroads, and all over the world they offer a rapid and cheap conveyance of surplus products to a ready market. They are in this age great adjuncts to commerce, but if there is no surplus products in the country through which they traverse, there are neither freights or dividends. Irrigate the lands in the great valleys of our State, and a surplus product will at once be created sufficient to freight all the railroads now running and contemplated, therefore the railroad companies should be liberal in aiding these means of internal development. The art of irrigation is one of the most ancient applications of science to agriculture. It has been practiced from time immemorial by Egyptians, Assyrians, Babylonians, and by other people already mentioned. The plains on the eastern parts of the world are to a considerable extent traversed by an immense system of irrigating canals, many of them hundreds of miles in length and to this day they constitute one of the most prominent features in the antiquities of these countries.

Egypt was anciently called the granary of the world, and from it the whole Roman Empire drew large supplies of food. There could be no more satisfactory illustration of the importance of irrigation, than is furnished by the fact, that for many generations without rain or moisture, except as brought by canals, the land produced an abundance of wheat with which to feed needy and often starving nations. Stern necessity taught the people long ages ago, as it should now Californians, to make the most of the means at their hands. Thousands of instances could be named if time would admit, of communities that accumulated great wealth by exporting surplus products be the reward of a system of irrigation.

There are two places in Europe so similar in mountain scenery, climate, soil and rivers, that a description is worth the time as a comparison to the San Joaquin and Tulare valleys. The two notable valleys or plains, Piedmont and Lombardy in northern Italy. Lombardy is situated in latitude 40°, surrounded in part by mountains (the Alps). The climate like that of California is mild and healthy. The plains like those of San Joaquin and Tulare, slope from the base of the mountains to the river.

This river and its tributaries, and the six lakes similar in size to lake Tulare, feed the thousand miles of canals and ditches which thread the plains. The Alps like the Sierra Nevada mountains overlook the valleys from heights of 1,000 to 8,000 feet.

Lombardy contains a population of over 3,000,000 or 480 to the square mile, and is one of the richest and most productive districts in the world, annually producing of cheese 52,000,000 pounds; wine 33,000,000 gallons; rice 5,000,000 pounds; wheat 3,000,000 bushels; silk 15,000,000 lbs; cattle 449,000; sheep, swine, mules and goats 385,000. San Joaquin valley is susceptible of doing better. With a system of irrigation it can support 5,000,000 of people. Piedmont, adjoining Lombardy, is similarly situated, nearly surrounded by stupendous mountains, the Alps, and like the San Joaquin and Tulare valleys drained by the river Po and its tributaries of which there are 52. The climate like Lombardy is intensely hot in the summer months, the ground as in California, so scorched that crops are only raised by a system of irrigation which is developed by a system of canals and ditches, so that but few are without a copious supply of water. The farms average from 7 to 25 acres each. The sale of the water for irrigation purposes in those valleys forms a business of vast importance. The plains of Piedmont contain less than 1,000,000 acres susceptible of cultivation, and the total amount of water required to irrigate this land is over 8,000 gallons per second, which is conducted through 4,000 miles of canals, there being a complete net work of them. The increased rental of land in Lombardy caused by irrigation is estimated at \$2,800,000 a year. In these two valleys there are 4,000 miles of canals, constructed for the sole purpose of irrigation, costing over \$200,000,000, yet the increased rental of land alone justifies this immense outlay, besides being instrumental in developing all other resources of the country. They have clothed these provin-

ces with perpetual verdure and given homes to nearly two and a half million of people.

In British India, irrigation is the chief means of fertilizing the land, and in some years the only way of rescuing it from entire barrenness. In one province in Northern India, controlled by the English Government, containing a half million of people, during a dry season 200,000 died by starvation and the fever which followed. To prevent the recurrence of a similar calamity, the English Government expended hundreds of thousands of dollars for a system of irrigation, furnishing water to a large extent of country. There are many other works in India of this character, some of great extent, constructed by the ancient rulers of the country. The waters of the Ganges and the Jumna, are taken from their natural beds and distributed over the plains which before were dreary wastes. The canal west of the river Jumna is the largest canal for the purpose of irrigation in the world. Its length is ten times greater than any other in Italy. The income of the canal is immense. Aside from the wonderful increased agricultural products, the most striking effects of the benefits of irrigation and engineering skill in India are found in the Delta Godanra.

Previous to the year 1844, the revenue was declining, the people impoverished and dispirited, when a plan for irrigation and distributing water by a net work of canals over an area of 3,000 square miles was projected. In 1851, over a million of dollars had been expended, and the effect was the employment of labor and capital with yearly increased crops, as the work progressed. Millions of capital within a few years has been by the English Government and English company expended in India for canal and ditches for the purpose of irrigation, having seen by experience that by irrigation, famine and starvation was prevented. From 1836 to 1849 English capital constructed 39 canals in India, yielding 69½ per cent. profit, besides lifting up impoverished districts to wealth and prosperity, an example for Californians to follow. In some parts of South America rain is never known. Contrivances to obtain and distribute water, were therefore considered by the Incas, as with the kings of Egypt, the most important object of their care. Many instances are mentioned of the Peruvians having conveyed small streams through a space of 60 miles to irrigate a few acres of land. The seventh Inca from Mango Cape constructed some water works which, in their beneficial effects, equalled any similar undertaking in any part of the world. He caused a canal to be made twelve feet in depth and 100 leagues in length, the source or head of which was in one of the mountains of that country, and traversed all the country of Rucanas, a province of Peru, and served to water the pasturage of those, until then, uninhabited lands.

Many other works of similar character are found in South America and Mexico, all denoting the great attention which the Incas and others paid to agriculture and the great necessity of irrigation, all displaying a wonderful degree of skill in their construction, and all contributing to the comfort, wealth and prosperity of the sections of country under the influence of irrigation. Centuries ago the barbarous inhabitants, so called, in South America, practiced artificial irrigation, by conveying water from the high ground in canals to their fields. Baron Humboldt says the ancient Peruvians carried the system of irrigation to a great extent. He traced the course of a canal from the foot of the Cordilleras to the coast. The people had laws for the protection of water very similar to those of Greece, Rome and Egypt, and all the older nations.

E. S. HOLDEN.

A FINE PUBLICATION.—We have before us Briggs & Brother's catalogue of flowers and vegetable seeds, for 1872. The outside appearance of the work, with its highly embellished cover and tinted leaves would seem to indicate that the book comes before us for notice from some extensive lithographic printing establishment or illustrated monthly printing house. Neither guess would be correct. The publishers are seedsmen, said to be the most extensive in the world; who raise and sell flower and vegetable seeds, sending them in large or small quantities to all parts of the country. They own no end of gardens and farms, both in and out of New York State—having a 260-acre farm at Clinton, Iowa, devoted expressly to seeds, and their establishment at Rochester, has upward of 60,000 feet of flooring, devoted exclusively to packing and shipping seeds.

But to revert to the catalogue before us, we must say, that it was more than was promised in the advertisements of the firm. Its typography is perfect. Its illustrated plates are

models of pictorial beauty. Its contents embrace useful hints upon the growth and raising of flowers and vegetables, and are the results of years of practical experience. The purchaser of a catalogue (an order to Briggs & Brother for one dollar's worth of seeds, secures it free,) also receives an insight into what he may obtain on certain conditions, in the way of one or two chromo lithographs of flower bouquets, representing bouquets of choice natural flowers, raised by Briggs & Brother. These chromos are fully equal to the highest priced chromos sold, and are a fit ornament for parlor or sitting room. The catalogue also contains two representative engravings of the chromos, and parties ordering only one, which, without an order for seeds, requires an enclosure of seventy-five cents, can select which they prefer.

There is no person interested in flowers, house or garden plants, or engaged in the raising of vegetables or market cereals, who cannot be benefited by the possession of this valuable and beautiful illustrated catalogue. An enclosure of twenty-five cents, secures it prepaid, and the amount in seeds is returned, if an order follows the purchase of a catalogue.

We might say in explanation of the slight delay in issuing the work, that Briggs & Brother have prolonged the time, in order to further beautify the catalogue with representative engravings of their chromos, as well as to add the very latest novelties, both imported and native.

Agricultural College for Oregon.

The press of Oregon is freely discussing the subject of an Agricultural College and Lands. The *Willamette Farmer* of the 3d, says:

"The quota of land coming to Oregon under the bill of Congress, passed in 1862 was 90,000 acres, a most substantial donation, and ample to secure a college of acknowledged standing and ability. For several years the interest of the State in this land grant were neglected. But the lands to fill the grant were finally selected by a Commission of the friends of agriculture, of which Mr. Douthitt, of Linn, was principle, who gave much valuable time in traveling and selecting the lands. Then came another period of repose. Politicians were too busy looking out for "offices" to give their precious time to the discharge of the duties they had assumed on taking the places the people elected them to fill, and so these selections for the Agricultural College were never approved at Washington. And now we hear that the O. & C. Railroad Company have filed their map on these very lands, and are likely to secure to the railroad what would have otherwise proved to be of great value to the Farmers' College. We still hope, however, that the State will not lose these valuable lands."

The editor of the *Farmer* alluding to the course usually adopted in other States, under the same provision of the Bill passed in 1862, censured the plan conceived in by the people of Oregon relative to a proposition of unprincipled politicians to make the Legislature designate the Corvallis College as the Agricultural College of the State, and remarks as follows:

"We blush for the good name of our State when we turn to the questionable record on this subject. A disgraceful political job disposes of the whole subject in a day without investigation, without competition, and makes merchandise of the people's interests in light and knowledge to put money in the pockets of political favorites, and therefore be it enacted that the Corvallis College is "just the thing."

As might have been expected from a "political job," the act of the Legislature designating the Corvallis College as the "Agricultural College of Oregon," does not require that college to do anything at all. It puts them under no bonds, duties or restriction of any kind, but just hands this 90,000 acres endowment over to them, "with compliments." So far, the law and the money drawn from the State Treasury under it, are an absolute waste of the people's substance."

Oregon certainly needs such a college as this endowment would and ought to supply, and the benefits derived from a school of this character, if properly managed, are incalculable to the future interests and importance of this State.

A miniature steam-engine, built of gold, set with diamonds, and standing on a three-cent piece, was one of the attractions at the Scheuectady Masonic bazaar.

The United States issued during the year 1871 about \$500,000,000 of postage stamps.

MECHANICAL PROGRESS.

Builder's Hardware.

A correspondent of the *Scientific American* calls attention to the poor quality of the large majority of the builder's hardware, now in use, such as nails, screws, hinges, latches, locks, window pulleys, hooks, etc. The correspondent assumes, which is an undoubted fact, that there is not a house carpenter in the country who has not had his patience tried by the poor quality and frequent failure of some of these articles.

Nails, as brittle as cast iron, are quite common articles; the iron of which some of them are made is so poorly welded that they often split by the first stroke of the hammer. Our American screws, in form and finish, are all that need be desired, and yet the material of which some of them are made is so poor that their heads snap in the act of screwing them into soft pine; the round headed ones are especially liable to this fault. The square corner under the head is unfavorable to strength, and a round corner or trumpet form would greatly improve their strength at this point; the slots in some of their heads are so shallow that they are useless until they are reslotted. Those brilliant mineral and porcelain knobs, which add such a pleasing finish to our doors, frequently jar off from their metal sockets for the want of a stronger and deeper dovetail to the sockets; and the sockets are continually getting loose upon the square shanks for want of a snug and proper fit to the screws that hold them on. The rivets that holds the cheeks to the window pulleys are often so slightly headed that the cheeks spread as soon as the weight is applied.

These are some of the defects which sometimes try the patience not only of builders and housekeepers, but of everybody who is able to raise a window or open a door. It would cost but little more to make these things of good material and strong and servicable at the points I have named, than it does in the present faulty manner.

This is a matter of considerable importance; and the correspondent above alluded to thinks if the manufacturers could appreciate it, as some others do, our hardware stores would soon cease to be encumbered with these demoralized articles.

Photographed Nerve Sections.

Dr. Duchenne, of Boulogne, has presented to the French Academy of Medicine an album containing copies of photographs of the appearances presented by sections of the great sympathetic nerve, the spinal ganglia, the spinal cord, and the medulla oblongata greatly magnified. He fixed the photographs on stone by a process he termed photoautography, the details of which, however, he does not communicate. It is satisfactory to find him stating that the results confirm the substantial accuracy of the beautiful drawings made by Dr. Lockhart Clarke on the central part of the nervous system, and especially upon the medulla oblongata. In his latter experiments Dr. Duchenne has adopted Dr. Clarke's method of preparation with chromic acid and carmine. He states that certain micrographic details come out with wonderful clearness in the photographs, and that by this means some important additions may be made to our knowledge. He has ascertained that in the white substance of the medulla oblongata there are nerve tubules from thirty-three to thousandths of a millimeter to three-hundredths of a millimeter in diameter.—*Nature*.

WELDING COPPER.—To unite two pieces of copper by welding has puzzled many mechanics and metallurgists, but we read, in a cotemporary, of its recent successful achievement. A compound of 358 parts phosphate of soda and 124 parts boracic acid is prepared, and is used when the metal is at a dull red heat; the heat is then increased till the metal becomes of a cherry red color, and the latter is at once hammered. A hammer of wood is recommended for this purpose, as the metal is liable to soften at a high heat; and the hammer should be used cautiously. All scale and carbonaceous matter must be removed from the surface of the copper, as the success of the welding depends on the formation of an easily fusible phosphate of copper, which would be reduced to a phosphide by the presence of carbon.

Straw for Boiler Fuel.

We lately alluded to the possibility of adopting in California the plan recently introduced in some grain-growing sections of Europe, of employing the waste straw for steam boiler fuel, instead of continuing the wasteful practice of burning it as refuse. In reference to this matter the New York *Artisan* says:

In no way does the rapid dissemination of information from one country to another bear better fruit than in the development of industries. In California the thrashed straw from vast fields of grain is of little worth, but the steam power required in thrashing is expensive, because of the cost of fuel. No one on the Pacific Coast appears to have thought of adopting the fire-box of the portable boiler to burning straw until experiments in far off Hungary were heard of. In that country, straw for fuel was found to cost but one seventh as much as wood in the furnace. In one experiment, it is stated, a sixteen horse-power engine thrashed four hundred and eighty bushels of grain in twelve hours, with a weight of straw equal to that of half a cord of oak. The story seems extravagant, and we mention it for what it is worth; but there can be no doubt that the quick, fierce blaze of the straw, properly fed to a furnace of suitable construction, might be made to produce a more effective generation of steam than the comparatively slow and sullen combustion of the wood. The plan, at all events, is thought, by Californians well qualified to judge, to be worthy of extended trial on the coast, and it cannot be denied that dry straw should make a better furnace-fire than the wet tan or the damp sawdust successfully used respectively in the furnaces of our Eastern tanneries and lumber establishments.

The Coloring of Veneers.

Some manufacturers of Germany, who had been supplied from Paris with veneer, colored throughout their mass, were necessitated by the late war to produce them themselves. Experiments made in this direction gave in the beginning colors fixed only on the outside, while the inside was untouched, until the veneers were soaked for twenty-four hours in a solution of caustic soda, containing ten per cent. of soda, and boiled therein for half an hour; after washing them with sufficient water, to remove the alkali, they may be dyed throughout their mass. This treatment with soda effects a general disintegration of the wood, whereby it becomes in the moist state elastic and leather-like, and ready to absorb the color; it must, then, after dyeing, be dried between sheets of paper, and subjected to pressure to retain its shape. Veneers treated in this way, and left for twenty-four hours in a hot decoction of log-wood (one part of log wood to three of decoction), removing them after the lapse of that time, and, after drying them superficially, putting them into a hot solution of copperas (one part of copperas to thirty of water), will, after twenty-four hours, become beautifully and completely dyed black.

A solution of one part of picric acid in sixty of water, with the addition of so much ammonia as to become perceptible to the nose, dyes the veneers yellow, which color is not in the least affected by subsequent varnishing. Coralline dissolved in hot water, to which a little caustic soda and one-fifth of its volume of soluble glass has been added, produces rose colors of different shades, dependent on the amount of coralline taken. The only color which veneers will take up, without previous treatment of soda, is silver gray, produced by soaking them for a day in a solution of copperas (one of copperas to one hundred of water).—*Exchange*.

NEW MATERIAL FOR CRUCIBLES.—A new mineral has recently been discovered at Wocheina, in Krain, a province of Austria, which is reported as promising to become of much importance in the manufacture of crucibles, etc., for assayers, steel-making, etc. This mineral is called Wocheinit, after the place where it is found. Its chief recommendation lies in its large percentage (50.82) of alumina. Richter has demonstrated that the resistance of crucibles to the effects of heat depends largely upon the amount of alumina contained in the fireclay. The new mineral is found to do best when mixed in about equal proportions with the best fireclay.

SCIENTIFIC PROGRESS.

TO DETECT THE PRESENCE OF ATMOSPHERIC AIR IN ILLUMINATING GAS.—It is well known that gas companies sometimes mix atmospheric air with their gas, which, while it measures more, adds nothing to the intensity of the light; moreover while pure illuminating gas as it exists in a gasometer is entirely inexpensive, a small admixture of air with it renders a gasometer almost as dangerous as a powder magazine. In fact a gasometer in England recently exploded, from being so mixed or adulterated, under circumstances, which, had the gas been pure, could not possibly have produced any such result.

In view of these facts, Mr. Lewis Thompson has devised a solution for the detection of air so mixed which he proposes as follows: A glass flask of about $\frac{1}{2}$ litre capacity, with two tubes in the cork, is provided, and into this is poured 14 to 15 grammes of anhydrous sulphate of manganese previously dissolved in 15 grms. of hot water. To this is added 60 grms. of tartrate of soda dissolved in 90 grms. of hot water. When these are well mixed, 25 centilitres of a caustic potassa solution are introduced and the whole agitated to form a clear solution. This done the cork is quickly placed in the flask and one of the tubes pushed down till it dips below the surface of the solution. The gas may now be passed through this, when, if any air is present, the color of the solution deepens to that of strong porter or even to the blackness of ink, according to the quantity of air which is present.

It is claimed that this preparation will detect the presence of even an infinitesimal quantity of air. If so, it might be made useful as a detection where gas companies are desirous of increasing the bills of their customers, without any expense to themselves.

CHEMICAL CLIMATOLOGY.—Dr. Argus Smith, an English sanitarian and scientist, has recently submitted a paper of enquiry as to whether or not it may yet be found practicable to ascertain the salubrity of any district by means of an exact chemical determination of the nature of the atmosphere of the locality. The Doctor thinks it is safer to examine the condition of the air by a few chemical experiments than by waiting to see how many deaths take place in a thousand of the population. The state of purity of the atmosphere, he considers, is best determined by the amount of albuminoid ammonia which it includes, just as the drinking quality of a water is estimated in proportion to its freedom from that ingredient, with its usual association of germs and other sewage impurities. He selects the air of Valencia, Ireland, on the brink of the Atlantic ocean, as a good example of pure sea air, and gives it a standard number—100. Compared with this, and descending in the scale of salubrity, he instances as follows:—Scotland, (inland) 1.29; Scotland, (sea coast), 3.11; England, (inland), 3.15; Liverpool, 4.07; London, 6.03; Manchester, 6.21.

PRESERVING BEET LEAVES FOR STOCK.—M. Mehay states, in a French Sugar Journal, that beet leaves may not only be preserved in good condition, as food for stock, for a period of six months or more; but that their food qualities are also actually improved by the process. The mode of preserving is as follows: A weak solution of hydrochloric acid in water is prepared of a density of from 3° to 4° Baumé. The leaves are then placed in baskets or by other suitable means plunged for a moment into this solution. About 1.5 per cent. of the weight in acid of the leaves to be cured is used in preparing the solution. This process is said to be well suited for all domestic animals, and especially for milch cows. Our beet sugar manufacturers should make a note of the above.

EFFECT OF PETROLEUM ON METALS.—A bronze composed of seven parts of copper, four of zinc and one of tin has been found to be so hard that it is very difficult to work, and is yet of considerable value for certain purposes when worked. So great is this value that various methods have been tried, and much ingenuity applied in efforts to devise a ready method of working the alloy. Quite recently, according to *Jour del' Eclairage au Gazette*, M. Bechstein has attained this desirable end by soaking the alloy in petroleum.

ILLUSTRATIONS OF POPULAR LECTURES.

One of the most encouraging evidences of the increased interest felt by the American public in the matter of Scientific Progress is the increasing demand for popular lectures upon various scientific subjects. The demand is also calling out the ingenuity of American scientists in devising ways and means for more instructive and striking modes of illustration. As a notable instance of progress in this direction reference has been made to some ingenious devices by which Prof. Morton of New York represents a total eclipse of the sun, showing the advance of the moon; the crescent sun; Baily's beads, and then at totality, the outburst of the "Corona" and the red prominences or "solar flames."

The formation of the sun flames was beautifully illustrated before the vertical lantern by means of a layer of water colored red by carmine, at the bottom of a tank of clear water. The "flames" were produced by passing electricity through a fine coil of wire in the tank, by which, owing to the heating of the wire, currents were produced which bore up the red fluid.

In conclusion, to illustrate the value of the compound light of the sun, as compared with the monochromatic light of sodium, the entire building was illuminated alternately with the electric and with pure yellow light, the latter seeming to destroy every trace of color in all objects present.

It is doubtful whether an American audience has ever been favored with more elegantly illustrated lectures on science.

CALEFACTION.—M. Laborde has made some suggestive experiments on calefaction. He let a thin thread of water pass through the jet from the blowpipe, and he found on examination that the water which had thus passed through a heat capable of melting almost any metal, was but slightly warmed; in fact, the difference was but three degrees. If a jet is passed through an ordinary flame, the increase in temperature is considerably higher, probably owing to the incandescent particles carried away by the liquid from the smoke. A sheet of water presents similar evidence. If the jet from the blowpipe is directed against it, it is not pierced, nor is there any sensible heating effect. The finger can be brought to within a few millimeters of the flame, and yet there is no sensation to indicate the close proximity of an otherwise so patent source of heat. It is suggested that if, instead of the metallic curtain used in theaters in the case of fire, a sheet of running water were interposed, so as totally or partly to enclose or shut out the fiery element, that would be an improvement upon the systems at present adopted.

THE CHEMICAL INFLUENCE OF SOLAR LIGHT.—It has been observed that the intensity of the diffused light of the sky (not of that reflected by the clouds) is proportional, within certain limits, to that of the sun. When the altitude of the latter above the horizon does not reach 10°, the intensity of the chemical action of its light is practically nothing, while the action of that which is reflected from the sky is quite appreciable. Now, we know that the chemical intensity of the solar light increases constantly and regularly according as its altitude increases, and that it reaches its maximum when it has passed the meridian.

These phenomena are easily explained, if we recollect the higher the sun mounts in its apparent course, the less distance do its rays have to traverse in the absorbing atmosphere of our planet. As the sun sinks in the afternoon, we remark a corresponding decrease in the active power of its light and the relation pointed out exists without reference to variations in the state of the atmosphere.

THE IRON SHIP A MAGNET.—The following are a few important facts, as deduced by Mr. Stobbing from his experience of iron ships: 1. A compass may be very true on one or several points, and greatly disturbed on others. 2. The errors of one ship are no guide to the errors of another. 3. The errors are least toward the middle of the vessel. 4. Every iron ship is a magnet in itself; some have the north pole aft, and some the south. The magnetic axis is frequently determined diagonally through the ship. 5. There are in all ships two points, either opposite or nearly so, at which there is no error; there are two other points where the error is the greatest. An error will sometimes not alter three degrees in a range of five points, but may then change thirty degrees in the next five points.

THE DAIRY.

California Dairying.

"Butter-making, Mr. B., is an art, cheese-making is a science." Such was the dictum of one of our leading produce commission merchants to me some years ago. Both operations are doubtless connected with the science of agriculture; and though cheese-making is a process requiring considerable nicety in order to ensure success, I demur to its being considered one of the exact or abstruse sciences. To speak the truth, the main rule with far too many cheese-makers is "the rule of thumb," and the science of the question is comprised in that abstruse mathematical problem:

How Does It Pay?

The "points" of a good cow are the same all the world over, and have been discussed in your columns—to any one desiring further particulars I would recommend Haxstou's "How to Choose a Milk Cow." M. Guenon's method of judging by the "scutcheon" (reversed hair on the back of thighs) is fully discussed and illustrated therein. There is in California comparatively little fancy stock—dairymen not troubling themselves much as to whether the Durham, Devon, Hereford, or Ayrshire is the prevailing strain in their herds. Anything classed as American, that milks well, is passable; and anything "mustang" is abhorred. I think I need enter into no disquisition on the antiquity of the animal; nor even into the family history of that celebrated cow, dear to childhood, that once on a time "jumped over the moon." I leave that for Professor Thomas in a future issue.

Now you may lay down as an axiom in our scientific enquiry, and I will undertake to prove it to any skeptic, that unless a cow is well fed she will yield a poor quality of produce, butter or cheese. Further, you may feed her ever so well, and at the same time allow her access to some noxious herb, mustard, for instance, and your produce will still be inferior. A few words on the feeding of milk stock are therefore necessary.

The Best Feed for Cows.

We all know and admit that there is no other such feed for a cow as good, sweet, green "meadow" grass, if I may apply that term to seed grasses such as California affords, viz: "Alfilerilla," wild oats, burr clover, and bunch grass in its many varieties; but these grasses get too dry after June for successful dairying—and it is to the various fall feeds that I wish to call attention. Our climate both curtails the season of green grass, and diminishes the list of plants available for the supply of green feed in fall or winter.

The feed most generally available earliest after grass dries is green barley or wheat—both yield milk fairly, but wheat is much the best. Few dairymen, however, care to feed thus early in the season anything but the drying herbage, and usually "corn-fodder" is the first cut feed given to stock.

Cornstalks as Food.

The common white California corn is relished by cows much more than the large Eastern varieties, and this small corn has the additional advantage of producing tolerable ears even when planted in drills two feet apart. I have fed American corn to cows and had about half the stalk left, while the same animals had cleared up the California corn, barely leaving the roots. Thus American corn, giving twice the weight per acre of fodder, but half of which stock will eat, is really inferior to the smaller white variety which is entirely consumed. Of course by starving them down to it stock can be made to eat anything, but I suppose any cow-keeper understands his interests too well for that. Broadcast-sown corn is not so good for fodder as that sown in drills, and it is doubtful if the yield is much heavier. Again, broadcast sowing is the lazy man's method and is not practicable in California except in very wet seasons, or on low-lying moist land. Corn fodder does not induce a large flow of milk.

The Value of Pumpkins.

Pumpkins are the feed next in popularity to corn, and yield rich milk, and plenty of it when the cow gets all she can eat. Some complain that feeding cows on pumpkins without first removing the seeds dries them up. I think the matter is that such have been too sparing with their pump-

kins. A cow will eat 120 pounds of pumpkins daily and hay besides—give her that much and the seeds will not dry her up. The common soft-shell "cow-pumpkin" is most convenient to feed, as they break easily by just throwing them on the ground. The objection to them is that they do not keep so long as the hard-shelled.

Potatoes induce a good flow of milk, but the expense of handling them must always interfere with their utility as feed. There is a new kind of potato, lately introduced into England, that produces 40 tons per acre; it is known as "Bovinia" or cattle feeding potato. I have not heard of its being tried in this country at present.

But to those who have land suitable for its cultivation there is no crop that pays so well, with so little trouble, as the mangel wurzel.

The Mangel Wurzel

Properly cultivated on rich moist soil may be made to yield upwards of 70 tons per acre. It grows well on alkaline land, and improves such land by absorbing the alkali. Cows do not relish the mangel wurzel as they relish pumpkins, but, judiciously fed with hay or grass, it is a good milk producer. It will keep longer than any other green crop, provided the roots are well trimmed and earthed over in heaps.

These are the main crops that the California dairymen has to rely on for his milk cows during summer, fall, and winter—but at present there is far too little attention paid to raising artificial food for stock and far too much reliance placed on the natural grass crop. One acre cultivated, say to corn, produces as much fodder as 5 acres left in pasture. However, we will suppose our cows are well fed on choice food, and will now see after the

Butter-Making.

The art as practiced in California differs but little from the practice of older countries. The milk is set in the ordinary 10-quart tin milk-pan; some prefer the stamped pans to those with seams, supposing them easier to wash. In most large dairies the pans are placed on revolving racks, as making the most of the space, and giving facilities for handling. When the cream has risen the pans are skimmed by tilting each over the cream can, and pushing the cream off with a flat piece of wood, instead of using a skimmer of perforated tin. When all the cream is collected, it is placed in a box churn which is turned by horse, steam, or hand power according to the size etc. of the dairy. The temperature of the cream should not be below 56° or much above 63°. In the former case the butter is too long in coming and when come to long in gathering, while in the latter, above 63°, it lacks firmness and may be greasy. When butter has come, it is the practice with many to run off the buttermilk and put two or three buckets of cold water in the churn, while the butter is yet in small grains, about half the size of wheat; the churn is then turned for a moment or so, the milky water run off, and the process repeated. This saves a good deal of washing on the "worker," and does it more effectually and quicker. The "worker" in its ordinary form is a triangular table, inclining to one corner; an arch in this lowest corner fits one end of a long octagonal or cylindrical piece of wood, 4 or 5 inches in diameter, the lever and the butter being placed on the table is worked over by the dairymen by means of this lever, instead of manipulating it with paddles, or fingers in the old style.

A New Butter-worker.

Capt. Allen, of Marin County, has introduced a patent "worker," which is a great improvement on the one described above. The table on which the lever works is a circular slab, made to revolve, while the lever attachment remains stationary. This enables the operator to bring any part of his lump of butter under the lever, and does away with any crowding of the butter against the sides of the table. The same gentleman is also the patentee of the ingenious butter moulds in ordinary use in large dairies. The two halves of the mould instead of being hinged together, are provided with brass handles something resembling callipers.

The use of the worker is to remove the last traces of buttermilk from the butter and to work in the salt. For the former operation it is very convenient to have cold water laid on through a rubber hose and delivered through a "rose." It is on the thorough accomplishment of these two operations that the goodness of your butter mainly depends; of course supposing it is well-fed, and churned at a proper temperature. Butter should be worked with water

until the water runs of clear, and the salt should be then so thoroughly worked in, that on cutting the butter next day no streaks should be observable. If, however, it is found to be streaky, a second working will remove the streaks, and make it of a uniform tint throughout. It is then fit either to pack in firkins, or to roll for "choice fresh;" and if your commission merchant does not send you the top market figure—I think you cannot have followed my directions. So much for the art.

Cheese-Making.

Now for the science. There was a time, before cheese-making was elevated to the dignity of a science, that it was thought possible to make a very eatable cheese in the wash tub, assisted by the wash-boiler, and pressed;—well, pressed anyhow. Now we require a regular laboratory; the prominent feature of which is a "Ralph's Patent Vat." This is a gigantic oblong bath tub with a jacket, so that a good deal of water can be contained between the tub and the jacket; under the jacket is a fireplace and flue, and the whole stands on four or more wooden legs. When cheese is made once a day, the night's milk is poured into the tub and cold water circulates in the jacket, cooling the milk as quickly as possible. In the morning after milking, the whole of the day's milk is warmed up until it reaches nearly 90° F. Any cream that had risen on the night's milk is sometimes heated separately, so that it may be thoroughly dissolved, and added to the whole mass. The rennet is then put in and the mass is well stirred. Now this rennet is, I suppose, the scientific element, belongs to the tribe of acids, and has an affinity for something in the milk, and as acids and affinities are chemical subjects, and chemistry is undoubtedly a science, I think we have proved after all that we cheese-makers are scientific men, and may claim kinship with Darwin or the monkey, or some one.

Rennet, its Quantity and Quality.

But seriously on the quantity and quality of the rennet, the quantity and quality of your cheese depends; and more, each fresh brewing of rennet needs testing. If your rennet is too strong, or if you put in too much, which amounts to the same thing, the curd comes too quickly, and the cheese is too hard, and possibly tastes of the rennet. If your rennet is too weak the curd is very long forming, and when cut loses its richness and yields white whey, or whey with the goodness of the milk in it, instead of the curd. German rennets are mainly used, and are soaked in whey, with salt added; some use beef rennets and think them economical.

Management of the Curd.

The curd should be well formed some 45 minutes after the rennet is added to the milk; at the expiration of that time the wire cutter should pass slowly once through the curd, which should then remain undisturbed about another half-hour; but should not be allowed to cool too much. It may then be turned up from the bottom of the vat and cut with the cheese knife, a formidable weapon with five blades. Heat is gradually applied, and cutting proceeded with, until the whole reaches a temperature of from 100° to 120°, according to the time of year, richness of milk, style of cheese required, etc., and until the curd is all cut into pieces no larger than grains of wheat. The curd is then allowed to remain in the warm whey until it is sufficiently cooked, usually some 20 minutes, but all depends on the richness of the milk. The richer the milk the more cooking it requires. There are various "rule of thumb" tests for telling when it has cooked enough. When squeezed in the hand the whey should run off clear, and the curd must not cohere, but when the pressure is removed should fall to pieces again. The whey is next run off, the curd being kept from "matting" by the dairymen's hands continually stirring it. Salt is then added, some two to three pounds per every 100 pounds of the dry curd.

Pressing the Curd.

It is then cooled and placed in the hoops, a cloth having been previously put to receive it; pressure is applied, and next morning, it is taken out of the cloth and put into a "bandago." It is then once more put in the press, and left as long as thought necessary—12 hours or upwards. The cheese-room then receives it, and when a little dry it is colored, greased and branded for market. Cheeses should be turned daily when new, when pretty dry, every second or third day is sufficient; the under side should be well rubbed with the hand each turning. It is impossible to give exact rules for cheese-making, as conditions are so variable. Climate, quality

of milk, time of year, strength of the dry rennets; all things of variable nature, on which the maker of cheese depends, make necessary that experience, without which good cheese cannot be secured.

Cleanliness is essential in all dairy operations, but hardly receives that attention which is its due. Where practicable it is a good plan to scald all milk vessels by steam after they have received a thorough washing.

To any who think of entering on the dairy business, I would specially urge the need of buying stock, few in number and A 1 in quality. It is possible to make as much produce from one choice animal as from two inferior, and at half the expense. Dairy expenses are necessarily very heavy, and every cow must do well if a satisfactory balance sheet is to be looked for.

Finally, raise plenty of fodder, roots, etc., and do not be sparing in feeding them. "The liberal soul shall be made fat."

I append an account of what may be done under favorable circumstances with good cows. But I would hardly recommend any one to expect results so favorable. Unforeseen drawbacks occur to spoil the most reasonable calculations; expenses increase, and receipts diminish in an unaccountable manner.

Cn.	
3,500 lbs. butter at 30 cts. per lb.	\$1,050 00
18 calves.	220 00
Sour milk fed to hogs	50 00
	\$1,320 00
Dr.	
Interest on \$1,500 invested at 1 per cent. a month.	\$180 00
Rent	200 00
Labor	300 00
Dairy expenses, salt, seeds, cloth, firkins, etc., etc., wear and tear of utensils.	150 00
Commission and freight	85 00
Taxes	20 00
	\$935 00
Profit	\$325 00

More About Early Tomatoes.

EDITORS RURAL PRESS:—I think "Quercus Virens," in your issue of Feb. 10th, is a little mistaken in giving Sacramento the credit for raising the earliest tomatoes, or at least of getting the fancy prices. Putah Creek is from one to two weeks in advance of Sacramento (or Sacramento river, as vegetable men style it) in sending tomatoes to market. There is a greater difference in a wet than in a dry season. I believe the price of tomatoes is reduced to about two dollars per box when they commence to ship from Sacramento river.

This early region on Putah Creek is confined to a small area, commencing at the mouth of Putah Cañon and extending down the creek some three miles and a half by as many in width. Even five miles further down the creek fruit and vegetables are at least one week later coming to maturity. It requires warm nights to push vegetation; I do not mean nights just above the freezing point, but nights such as I have experienced on Putah creek where the thermometer half an hour before sunrise stood at 100° F.

There is a difference of six weeks in the ripening of the Mission grape between Putah Creek and Thompson's, at Suscol on Napa creek. The distance apart cannot be over forty miles in an air line.

I think the section your correspondent speaks of, near San José, would be better adapted to growing oranges, lemons and limes, than for raising early tomatoes. Nowhere within the range of coast fogs can gardeners compete with the inland valleys for raising early vegetables—at least not in northern California.

I will give any man \$100 who will show me a place earlier than Putah Creek, with equal facilities for shipping to San Francisco, which are as follows: 12 miles land carriage to the railroad, 34 miles by rail to Vallejo; thence by steamer, 28 miles to San Francisco. I would like to hear from Isaac B. Rumford of Orange Grove, Tulare county. I believe he was a resident of Putah Creek some three or four years ago; perhaps he knows of some place in his vicinity as early or earlier than Putah Creek.

Alvarado, Feb. 18.

MILK FOR A POUND OF BUTTER.—A correspondent of the Massachusetts *Ploughman* says trials have shown that from the milk given by his herd of nine grade Short-Horn cows during 142 days, commencing June 1st, he made one pound of butter from 24 pounds of milk.

FARMERS, everywhere, write for your paper! It will improve yourselves, benefit your neighbors and oblige posterity.

AGRICULTURAL NOTES.

BUTTE.

Gazette, Feb. 17: DELAYED.—The grain seeding in this immediate vicinity and in some other portions of the county is yet far from finished; and, with favorable weather it will carry some of our farmers a week or two into the next month, which is full late to sow with fair chance of good crop. Still, we have known good yield from grain sown as late as the middle of April. Such chances should not be taken, however, if it is possible to avoid them.

APPLES.—There appears to be a good supply of winter apples in this vicinity, and they are being shipped below by the carload.

CONTRA COSTA.

Ledger, Feb. 14: TWITCHELL ISLAND LEVEE.—The remarkable success attending the effort to grow grain on Twitchell Island last season, induces the proprietors, Prather Minor and others, to construct a good and substantial levee around the island, of sufficient height and width to resist the strongest freshet or the highest tides. The slight levee that was thrown up last season, was only intended to protect the island from overflow at high tide, not as a resistance to freshets. In addition to the proposed levee, which will be twelve feet at the base and six at the top, the island will be guarded against damages from any break, or overflow, by a series of ditches for speedy drainage. It is the intention of the owners to seed the whole island with grain the present season.

The *Gazette* says: There is a good deal of activity manifested in the line of tree planting at Martinez and the attractions of the place will be greatly augmented thereby.

EL DORADO.

Democrat, Feb. 17: The farmers and fruit growers in the neighborhood of El Dorado are sanguine of bountiful crops the present season, and are therefore cheerful. Another cause to make them contented is, that the heavy rains of the present winter has washed and cleansed the old mining debris to an extent that promises well for the health of the community. There will be more grain grown and fruit raised in Mud Springs Township the present season, by a large per cent. than in any former year. The principle thing now to look after is the best market for their surplus. From present prospects their grape yield will find a market right at home. Higgings & Theisen the past season manufactured a large amount of wine and brandy, and will do a still larger business the present year. We are glad to note that these gentlemen are getting better prices for their wines than heretofore, and are satisfied that still larger prices will be obtained, as every year's experience improves the quality of their wines.

INYO.

Independent, Feb. 17: Farmers generally throughout the valley have completed sowing small grain, and the prospects for good crops were never more flattering. The late wet weather has been of great benefit, and the immense snow banks in the mountains insure an abundance of water for irrigating through the Summer.

MONTEREY.

Argus 17: Nature this season has been so prodigal of her watery blessings, that many farmers hereabouts find their lands too wet for plowing purposes. The character of the present season, however, fully compensates for the lack of moisture during the two years last past, and is such as to infuse energy and confidence into the many branches of business that depend chiefly on the success of agriculture. Late are preferable to scanty crops.

Grass has grown wonderfully in the past three weeks; it never, this time of the year, has been seen of thicker or stranger growth.

CHEAP.—Three leagues of land in Monterey county, with a perfect title, were recently sold to one party at the rate of four dollars per acre.

NAPA.

Reporter, Feb. 14th: SPRING-LIKE.—Almond and apricot trees have been in blossom for two or three weeks. Willows have put forth fresh leaves, and some kinds of roses are in bloom. The hills and mountains are as green as they ever get to be, and would present a glorious sight to a new-comer from the frozen regions of the Atlantic States.

Reporter, Feb. 24: Our farmers begin to discover that abundant rain is a blessing not wholly without alloy. We have had already more than ever before

fell in Napa Valley in a year, so that apprehensions of a lack of moisture have disappeared, but the trouble now is with the getting in of the crops. All over the county the farmers are sadly behind with their plowing. The low lands in the valleys cannot be plowed until we have dry weather, and that appears to be in the indefinite future. Meanwhile farmers are keeping a force of men and horses unemployed at heavy expense, to be ready the moment the land is in condition for cultivation. Fields sown before the rains came, look very promising. Some of them, however, have suffered considerably by the floods. All kinds of farm work are behind-hand, and little can be done until the ground is solid enough to bear men and teams. As the clouds looked yesterday morning, we infer that this will be about the middle of next June.

PLACER.

Herald, Feb. 24. SPRING IS HERE.—Almond trees are now in full bloom here, and peach buds are swollen and begin to show color; grain and grass is growing finely and the hills are green with vegetation. Pasture for stock on the commons is now good and growing better day by day rapidly. Never have we seen a season open with more promise to the people of this county than the present one. May this promise be realized at harvest time.

SAN BERNARDINO.

Guardian, Feb. 10: INTO FARMS.—Very near that entire body of Government land lying in a northeasterly direction from town, bordering upon the Warm Creek settlements, and stretching to the foot of the mountains has been taken up, and located in farms of one hundred and sixty acres by settlers, and their first crop of grain put in this season. This land, it is said, will produce as fine grain and hay as any in the valley, and the soil is peculiarly adapted to planting orchards and vineyards. Three years ago there was not an acre of this land cultivated, now, thriving farms dot this portion of our valley up to the very foot of the mountains.

The warm weather of the past week together with the gentle, almost spring-like showers, have caused vegetation of every description to grow with a heretofore unequalled rapidity. Already the extensive wheat fields of our plains have put on their mantle of green, and the husbandmen are laying by their plows for another season. Truly, the prospects for an extensive grain yield were never better.

SANTA CLARA.

Guide, Feb. 20: The Farmer's Club had an interesting meeting last Saturday, and the questions of schools and teachers' wages were discussed. The farmers generally argued that too high wages were paid teachers, that by paying them smaller wages and making the sessions longer, it would better meet general requirements. There was a ring formed by which high rates were paid, and school kept open only a portion of the year. Dr. Lucky opposed the idea, and held that great inducement should be offered in order that first-class instructors might be obtained. Next Saturday several questions will probably be taken up, viz: the best means for the extermination of squirrels; best method of raising hops, and manufacturing bacon, lard and dairying products in the valley.

SAN JOAQUIN.

Independent, Feb. 17: MONSTER FARMS. Between Lathrop and Stanislaus river, and from that stream to Modesto, will soon be one continuous grain field. The same is also the case between the Tuolumne and Merced rivers, and the early grain is looking well. Several farms are of immense size. Some of these tracts contain 700 acres, others over 3,000 and one farmer, John Mitchell, has between 30,000 and 40,000 acres under cultivation. There are many persons in the same section who have farms under cultivation varying from one thousand to three thousand acres.

The new town of Merced is about fifteen miles south of the Merced river, on a level plain, between Bear creek and Mariposa creek. The site of the town is rather low, although the land in the neighborhood is very good. It is supposed that a large majority of the Yosemite travel the coming season will stop at this point, and a large hotel is to be immediately erected.

Republican, Feb. 17: WHEAT EVERYWHERE.—The San Joaquin Valley, heretofore denominated the great wheat field of California, will this year prove itself thrice worthy the name. After a season of almost total failure of crops, such as we had last year, a person passing over the valley is inclined to wonder whence came all the seed used in sowing the miles and

miles of fields now covered with young wheat. Start out of this city to the north, east or south, and for a day's journey the traveler sees almost nothing but wheat, wheat everywhere. Take the Stockton and Copperopolis road, and it is wheat from the suburbs to and into the foothills, a distance of thirty miles. Go down on the Stockton and Visalia road to Oakdale, and it is wheat as far as the eye can reach. Travel over the Valley road to Merced, seventy miles, and on either side of the track it is one continuous field of wheat. On the west side of the river, from Antioch southward for more than a hundred miles, the whole surface of the ground is covered with wheat. Farms varying in size from 160 acres to 7,000 acres are plowed, harrowed and sown in wheat. From Bear Creek down the Valley, wheat sowing and wheat growing has become almost a mania. Everybody sows wheat. Further south in the Alabama settlement, in other portions of Fresno county, and in Tulare and Kern counties, the favorable season and the approaching railroad have stimulated the farmer to extraordinary exertions, and a larger area than ever before is sown in wheat. We cannot venture upon even an approximation of the number of bushels of wheat which will be raised in San Joaquin Valley this season. The amount will certainly double, and probably treble, that of the most prosperous year of the past. Already the cheering prospect of an abundant harvest is bearing fruit and business is reviving. The farmer and the merchant rejoice in the certainty of a prosperous season.

SAN LUIS OBISPO.

Tribune, Feb. 17: The farmers are fast plowing the soil, and already there is far more ground broken up than in any previous year. On every side we see cultivation where formerly there was none at all. The season is also far more advanced for the time of year than we have witnessed for half a decade. Where not plowed, the whole landscape presents to the eye one outspread carpet of green. We have never seen so fair a season.

The late copious rains have done a great deal toward cleaning the ground of pests, such as squirrels and gophers; but, of course, there must always be some drawback to prosperity.

We have heard many complaints lately of the prevalence of a worm, similar to the cut worm, which has bred this year in countless numbers in the ground, and makes its attacks upon the grain, just before sprouting. We wish that some one or more of our cultivators would write us their experience of this worm, so that the community in general may be advised as to what it is, and the means of getting rid of it. We never heard before of this troublesome pest.

SUTTER.

Banner, Feb. 17: Fully \$30,000 goes yearly from Sutter county for potatoes. According to the Surveyor-General's report only eighteen acres were planted last year in the county. There is no good reason why every dollar of this money cannot be kept at home. Some of the best potatoes we have seen were produced in the county.

Good beef cattle are very scarce in the market of Marysville, as well as in other parts of the State. There is little probability of the stock being increased until the spring feed is sufficiently advanced to permit the lean stock to fatten.

TULARE.

Delta, Feb. 17: UNCOMMON PRODUCTION. We have had frequent occasion to boast of the extravagant way in which Nature does her perfect work in this part of the United States—in the great Tulare valley. Now we record another. Mr. L. D. Weisner has brought to our office a goose egg which weighs a pound and measures nine inches in circumference and eleven the long way. It is just double the weight of eggs laid by the same "chicken" and may be set down as one of her best efforts.

A. M. Fletcher has invented a very superior quality of house paint for which he will take out a patent. The new Congregational church is painted with it. It stands this climate as well as the best oil paint, it is claimed, and costs less than one half as much.

MERCED.—A train of seven cars left Sacramento last Saturday, carrying excursionists and passengers to attend the sale of lots. The new town is fifteen miles south of the Merced river on a level plain between it and Bear creek. The ground is low and the land good. Lots sold at from \$85 to \$575 each, being 25x160 feet.

The Bakersville *Courier* says that the new flouring mill at that place, one of the best in the State, has now been running

several weeks, and will be the means of retaining large sums of money which have hitherto gone abroad. Other enterprises are flourishing and progress evident everywhere.

DEAD RABBITS.—The citizens of Harper's neighborhood, on Tule river, being greatly annoyed by a superabundance of hare, turned out en masse and slew them by the score. They were destroyed at the rate of seventy or eighty per day until a reasonable scarcity prevailed.

YUBA.

Appeal, Feb. 22: Our correspondent from West Bear river, "Chemung," sends us the following under date of the 20th: Nothing of importance has been done as yet among the farmers in this section since I wrote you last, owing to the continual rain storms with which we have been visited this winter. The farmers in fact have done nothing since the commencement of the rainy season, except fixing up their fences between showers and keeping under shelter during the rain. In fact, I think it is getting too late in the season to plant much more grain, though there has never been a better prospect for good crops in this township than there is at the present time. Our school is prospering finely. We have church service at the school-house three Sundays in each month, and Sabbath school every Sunday; so you will observe that we are a Christian people, if we have no big church in our midst.

SCARCE.—Good beef cattle are very scarce in the market of this city, as well as in other parts of the State. There is little probability of the stock being increased until the spring feed is sufficiently advanced to permit the lean stock to fatten. The two years' drouth has reduced the stock of fat cattle throughout the State, and this heavy winter has not had the effect of changing the condition of the herds for the better.

LUMBER.—The Union Lumber Company have been sending off considerable lumber within a few days. On Saturday, two carloads of sugar pine were sent to Oakland. On Monday, a car-load of building lumber and posts to Gridley's Station, and yesterday, a car-load of posts to Biggs Station. Fifty thousand feet of red wood boards were expected to arrive yesterday by the steamer Pioneer.

TOO WET.—A good portion of the unplowed land of Sutter county is too wet for successful cultivation at present and in consequence the plows are standing idle.

OREGON.

West Side, Feb. 9: An Astoria correspondent says: The most of January has been clear and pleasant, with frosty nights. There is no complaint of suffering stock in this section of country. The tide and cranberry lands have afforded green pasturage all winter, and there are now acres of good grass six and ten inches high that are untouched by stock, and will continue so until more stock is brought here. Persons desiring stock or dairy farms would do well to examine this locality. With an abundance of grass, mild winters and cool summers, a more desirable situation cannot be found. The whole amount of snow fallen would not aggregate a depth of four inches, and none lay on the ground longer than three or four days.

Fishing has for several days attracted the attention of piscatorial art hunters and other folks. A small fish, called by some, herring, and by others smelt, have been passing by the wharves in large schools followed by seals and flocks of birds which prey upon the fish. So dense were the schools of fish that they were caught in large numbers by casting lines, to which were attached several hooks, into the water without bait and gently drawing them in, for in passing through the school of fish the hooks would catch in their flesh and secure them. It was a continual casting and drawing in, rewarded often with three or four fish at a draw, making the sport active and interesting.

MONTANA.

Helena Gazette Feb. 12: FARMING IN MONTANA.—VALUABLE CROPS.—Yesterday Mr. Ed. Moran brought to Helena with his mule teams, from Murray & Tierney's ranch in the Missouri Valley, 19,550 pounds of brewer's barley—which Messrs. Murray & Tierney engaged to deliver from their ranch, to Renk and Hoskey, proprietors of the Helena Brewery. Messrs. Murray & Tierney raised on their ranch last season, 60½ bushels of barley, which averaged in weight 56 pounds to the bushel; 2,074 bushels of oats, and 840 bushels of wheat, besides vegetables, etc., which will net them a handsome profit for their summer's work.

FARM HINTS.

Forests and Rain.

Does the Destruction of Trees Diminish the Rain-Fall?

Bonssingault, in his "Rural Economy," gives as his opinion "that the felling of forests over a large extent of country has always the effect of lessening the mean annual rain-fall."

Baron Humboldt states in his Asiatic travels, that "in crossing the steppes of Baraba, on his way from Tobolsk to Baroul, he perceived everywhere that the drying up of waters increases rapidly under the influence of the cultivation of the soil."

The same experienced traveller in his description of Lake Valencia, in the Valley D'Aragua, in Venezuela, a sheet of water on the high table lands, and without any outlet, ascribed the diminution of the waters to "the extensive clearings which had been effected in the course of half a century in the Arragua Valley," and concludes by stating "that men in all climates seem to be bringing upon future generations two calamities at once—a want of fuel and a scarcity of water."

Early travellers on the Colorado Desert, in this State, will remember the cluster of about thirty palm trees at the so-called Palm Springs, on the west side of the cañon, between the Vallecitos Springs and Carisa Creek, and about twelve miles south of the former. These palms were planted by the padres of the old San Diego Mission. From the traditions of the old Mission we learn that the padres found a small flow of water at irregular intervals at this particular place in the desert. They planted palms there for the same reason which induced the Arabs to plant date palms at the springs in their deserts, viz: shade and water. From the circumstances of the case, the conclusion is a fair one that these Vallecitos Cañon palms were propagated from the dried dates of the Mediterranean, shipped among the supplies to the Mission. These palms increased the supply of water from the springs, and made it perpetual. The same vandal gold-hunting element that used the well buckets and curbs on the Colorado Deserts for fuel cut down these few palm trees, and the spring shortly after disappeared. What renders this vandalism without excuse is the fact that the palm trees were unfit for fuel.

A similar phenomenon is recorded by M. Desbassyns de Richemond as having occurred in the island of Ascension. Upon planting the trees anew, however, the spring in a few years reappeared. No doubt our palm springs would reappear if we replanted the palms; and we respectfully submit these facts to the attention of the proper Legislative Committee, suggesting that a few hundred dollars be appropriated for this purpose.

Forests retard evaporation; agriculture increases it. Forests hold back the water that has fallen, and thereby diminish the chances of floods. Every leaf, every stick, and the beds of moss and mould are miniature reservoirs.—*Morning Call.*

THE San Francisco *Horticulturist* suggests that the orchardist and market men should label their fruit so that purchasers can see the names of the different varieties. The idea is excellent. Such a custom would assist in educating the public taste, and increasing the demand for the best kinds of fruit. It frequently happens that people who want a certain kind of apple, pear, grape, plum, or cherry, with the appearance of which they are quite familiar, cannot order it because they do not know its name.

THE BEST BEANS ever grown are the Lima. They cook quickly, are rich and well flavored, and command double the price in the New York market of any other bean. They are a vine or pole bean, but in this dry climate do not require to be poled. Cooked for a couple of hours with a piece of bacon or pork, they make a dish that any epicure would highly prize. Just try them.

It has been observed by those who cultivate hemp in this State, that the male plant dies long before the female plant. Has this been noticed before, and what is the explanation?—*Ohio Ruralist.*

WHEREVER you see a neat farm, be assured the manager is an economical man; where a farm is the reverse, the manager is not an economist.

Man's Place in Nature.

The minds of many men are confused on this question. One reason for this is, the fact that they start out on wrong principles. They go on the supposition that man is simply a developed animal, whereas, in fact, he is a created human being. "In the image of God created he him." These secular philosophers, such as Owen, Darwin, Huxley, and others, fail to comprehend this grand fact; nor do they seem to understand where to draw the line between man and animals—between instinct and reason. Phrenology explains this whole matter. Man has a three-fold na-

Fig. I.

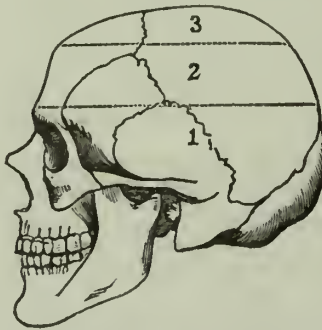


ture, and, for the sake of illustration, we may say the brain is like a three-story house. The lower story, including the cellar and kitchen, where the eatables and drinkables are supposed to be stored, answers to the animal propensities and the instincts. Here are located the organs of appetite, the sight, hearing, taste, smell,—indeed, all the senses, including the domestic affections, the procreative principle, common to reptile, animal and man.

The second story of this house, or brain, is occupied with a class of faculties not possessed by the animal, and here is where the line may be drawn between instinct and reason, man having both, while the animal has but one. Here in this second story is reason, causality, comparison, invention, with other powers not possessed by animals, but constituting necessary and ever-present powers of man.

Now, let us move up one story higher.

Fig. II.



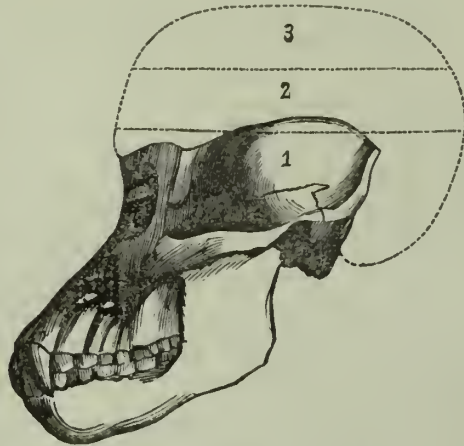
What do we find here? Furniture and appointments totally above the reach or comprehension of any animal. We have Benevolence, which no animal ever possessed; we have Conscientiousness, a sense of justice on which integrity is based, never manifested by any animal; we have the faculty of Hope, which gives man a sense of immortality; we have faith, which gives him a spiritual sense or a prophetic forecast of the higher life, of that which is beyond the reach even of reason; we have Veneration, which gives devotion, and inclines man to acknowledge his obligation to obey the superior or creative Power, and render homage to his Maker, and be submissive to do his will. Man prays! The lower animals recognize no superior, except after a trial of strength. These traits make man a different being from any of the animal kingdom—the crowning work of creation.

And this is "man's place in nature." Between man and animal there is a marked

separation with no connecting links. Examine the heads, even the naked skulls of reptile, beast, bird, and man, and the whole thing is as simple as it is absolute. Then why puzzle over the question of man's descent, or, rather, ascent, from plant to beast, and from beast to human? Why not take these basic principles of Anatomy Phrenology and Psychology, and settle the question on these? It will come to this at last. The three-fold nature of man we have often discussed, and now propose to illustrate it, viz., the animal or instinctive, the intellectual or reasoning, and the moral or spiritual natures. In Fig. 1 these three ranges of powers are indicated. In region No. 1, below the first line, the organs in the base of the brain are shown. These are common to man and the lower animals. This region takes in the perceptive intellect, the passions, propensities, and such of the social organs as belong to animal life. That region may be called the animal brain, located in the lower story of the head. Rising one step to region No. 2, we have the great reasoning or intellectual field, which the animal does not share with man. In region No. 3 we have the moral and spiritual, which is entirely wanting in all the animal kingdom. These occupy equal proportions in the well-balanced head. In Fig. 2 we exhibit the skull of a human being, with the three regions indicated by dotted lines and marked by numbers. The moral and spiritual region is not quite so well developed in the skull, Fig. 2, as in the head, Fig. 1, but it answers all the purposes of illustration.

Fig. 3 is the gorilla's skull. Its shaded

Fig. III.



outline shows the immense jaws and face, and the small bulb constituting the cranium. The brain is not larger than that of an infant a week old. We draw the same three lines, showing the regions as we show them in the human head. Region No. 1, it will be seen, contains almost the entire brain, showing that the gorilla has only the animal passions and instincts. We have drawn a dotted outline of a human head over the gorilla's, showing what the gorilla lacks in development upward. Although he is larger than man, bodily, he has a small brain, and nearly all the brain he has is located in the animal or instinctive departments. Region No. 2 is practically wanting. Region No. 3, as will be seen, is wholly wanting. If the head were developed according to the dotted outline, and the face were shortened off like that of a human being, and the prodigious jaws were more light and delicate, it would look like a human head, and with such a development would have the human faculties to guide, regulate, and control his immense physical force. But the gorilla is a beast, and only a beast, with a beast's brain and face; and though the outline of the body has some analogy to that of the human, the mental qualities which constitute human nature strictly speaking are, in him, entirely wanting. Those teeth are quite as savage and beastly as those of the bear, and the brain is shaped like that of a dog, with decidedly less of intelligence in the development of the brain, and far less of it in character. The advocates of the development theory make altogether too wide a leap from monkey to man. They pass many animals in that leap which in point of intelligence are quite in advance of the whole ape tribe.—*From the Annual for 1871.*

As a sheep and stock growing country New Mexico has no equal in all the West. There is an increasing interest there in wool growing, and many of the wealthy Mexicans who have flocks of from five to twenty thousand head are improving the stock by importations of Eastern breeds.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

NEW MATERIAL FOR PAPER STOCK.—S. D. Baldwin, Marysville, Cal. This patent claim is for the use of *Scirpus Lacustris* (or common tule) for the manufacture of printing, wrapping and other grades of paper. Mr. B. has for some considerable time had experiments going on here and in the East, and has finally succeeded in establishing the fact that the native tule, which grows so abundant, in almost endless tracts of cheap swamp lands in California, can be economically manufactured into first-class papers. We see no reason why it cannot be gathered, and with very little preparation pressed into bales for shipment to the principal paper manufacturing countries, there being supply sufficient for the world. Although no considerable quantity of paper has yet been made of this material, we have no doubt of its value, and hope soon to learn of extensive arrangements being made at some convenient point in this State for preparing the raw material for shipment abroad, and for use at home. There seems to be no good reason why it should not stimulate a much neglected manufacturing industry on this Coast, i. e., paper making. We hope Mr. Baldwin will succeed in making this useful and abundant material more widely known and establish it as one of our State exports.

RAISING TAILINGS.—Wilford A. Rogers, Folsom, Cal. This invention relates to a method for elevating tailings and dirt from placer diggings when the claim is situated lower than the surrounding ground, and it consists of a slightly declining sluice box, into which the dirt is thrown and carried to the lower end by a current of water. At this point the box enters the lower end of another close box which inclines sharply upward so that its outer end extends to the surface of the surrounding ground. One or more nozzles enter this box at different points near the bottom and point in the direction of its outlet.

A strong current of water passes through these pipes and by its momentum carries tailings up to the surface of the ground, the action being similar to that of a Giffard injector.

A PHOTOGRAPHING INVENTION.—The *Morning Call* mentions one of the important inventions for which patent claims have recently been made through our Scientific Press agency, as follows:

"Mr. H. W. Vaughan, the well known photographer of this city, has just invented a little apparatus which, it strikes us, will be found especially useful in taking the pictures of children, as it dispenses with the great black cloth with which the tube of the camera is covered, and the removal and replacement of which, while the picture is being taken, tends to impair the result, by distracting the attention of the sitter. Instead of the cloth or brass cap which covers the tube of the camera, Mr. Vaughan employs a disk of brass or other metal, consisting of two semi-lunar portions, which open and close like the blades of a pair of scissors, and thus open or close the tube of the camera. They are worked noiselessly and instantaneously by the slight pressure of a little knob on the top of the instrument, and the plate is exposed and closed again without any manipulations that can be seen by the sitter. By this means the operator waits until the child assumes a favorable expression, when he presses the spring, exposes the plate, and takes the picture without making any motion that attracts the attention or causes a motion of his sitter. Like all useful inventions, this is exceedingly simple, and may be attached to any photographic camera."

PERPETUAL MOTION.—A contemporary has published a series of articles on perpetual motion, in which it has illustrated "every principle tried since the search began." The object has been to show inventors the folly of pursuing the search further.

USEFUL INFORMATION.

Mechanical Applications of India-Rubber.

Pure india-rubber is of a white color; its dark color, as generally used, being occasioned by smoke. It is composed of hydrogen and carbon, and is soluble in coal-tar oil. When pure india-rubber is combined with flour of sulphur we have the commercial product called india-rubber, of great value, from the many purposes to which it may be applied. The proportion of sulphur to caoutchouc is about 2-5 parts in 100. When the proportions of sulphur are considerably increased and greater heat applied, a product is formed called vulcanite or ebonite, much used in ornament, and composed of 2 parts of caoutchouc or india-rubber, and 1 of sulphur, heated at 300° F.

The wear of vulcanized india-rubber in its application to steam engine pump-valves is a subject of great importance to the marine engineer. The india-rubber valve-covers are affected in many ways, and the duration and time of wearing present certain anomalies. They are subject to various actions, some mechanical and chemical; the specific density of the material, and the formation of the guards of the valves, on the one hand, and the action of the oil in the lubricants on the other. Pure rubber does not present the same advantage for such applications as vulcanized rubber containing a metallic pigment, experiments showing that pure rubber is more readily acted on by oils and grease than that of mixed quality. Pure rubber may be used with advantage where the water is free from grease or oil; but a mixed rubber of a specific gravity of about 1.202 is more generally useful.—*Ex.*

ARTIFICIAL EYES.—HOW MADE.—For many years eyes of glass for dolls, dummies, wax-work figures, stuffed birds and beasts, have been made in Birmingham; but only since the Exhibition of 1851 have artificial human eyes been produced there, equal if not superior to those of French manufacture. The process of manufacture is simple enough, but it requires, nevertheless, a good deal of manipulative skill. The workman takes a number of glass rods of the requisite colors, and heats them in succession. The first is generally white or colorless glass to form the white of the eye; the next forming the iris; and the third, "a little spotted from a black rod," forms the pupil; evenness of the outline is the great object to attain, and this requires no small amount of skill. The demand is prodigious, especially for dolls' eyes, which are packed in hogsheads and sent to all parts of the world.

BLACKING.—The lustrous qualities of blacking are frequently derived from ingredients which are most deleterious and destructive to leather. Herr Artus publishes a new formula, and claims several advantages for it, to which we may add its cheapness and accessibility: Three or four pounds vegetable black, 1½ pounds ivory black, 5 pounds molasses, and 5 pounds glycerine, mixed thoroughly together. Six ounces gutta percha in small pieces, are then melted and when fluid, 20 ounces olive oil are added, and subsequently, 2 ounces stearine. The second mixture, while quite hot, is stirred into the first; and then a further addition of 10 ounces gum Senegal, dissolved in about 3 quarts water, is added. This compound is the stock; for use, it should be diluted with about three times its quantity of warm water.

IMPRESSIONS FROM PRINTS.—Take of oil of turpentine one drachm, liquid potash four drachms, and mix together thoroughly by shaking in a bottle; then saturate a piece of wool thoroughly with the solution and dab it gently on the print. When you find that the print to be copied is nicely damped, place a sheet of white paper over it, then another paper on this, and rub gently with your finger.

CHINESE ASTRONOMY.—Prof. Jno. Williams of the Royal Astronomical Society of England, has lately published a book of Observations on Comets, in which he makes a brief allusion to the progress in this branch of science which has been made by the Chinese. He seems to recognize as authentic, observations recorded 2,300 years before the Christian era.

The eleven Territories exceed by nearly 200,000 square miles, the aggregate area of the at present admitted States of the Union.

Dust Rings for Watches.

This is a new dust excluder, to be applied to watches between the top and bottom plates of their works, for the purpose of preventing impurities from entering the works. The underside of the top plate of the works of a watch is beveled at the edge, the beveled portion extending to a shoulder. The dust excluder is made of a metallic spring band, which is laid around the train so as to rest against the beveled portion of the top plate, or against a similar bevel of the bottom plate or both. The ends of the spring band are either made to overlap, or fastened to a cast arch, which is set between the top and bottom plates, and bulged out to admit the protruding main wheel. This arched casting abuts with its rounded ends against the ends of ears formed on the top plate. One end of the band is secured to the cast arch by a screw, and the other end is slotted and fitted over a screw projecting from the arch, the screw being tightened on the narrow part of the slot. When the band is used alone, the screw or connecting pin projects from one end through a slot in the other. The spring power of the band crowds it against the bevel, and serves, therefore, to properly exclude the dust.

WASTEFUL USE OF GAS.—The Board of Trade, of London, has recently submitted an exhaustive report, through a special committee of experts, with reference to the principles of gas illumination. The following points with regard to the economical use of gas should attract the attention of gas consumers generally:

By using good burners instead of bad ones, consumers may obtain from 30 to 50 per cent. more light, while their gas bills remain the same. The improvement of burners is important as a sanitary reform, as in furnishing the same quantity of light the good burner will consume less gas and consequently less air and will produce a smaller quantity of the products of combustion, and less heat, than a poor burner. Burners from two newspaper offices gave only one-half the illuminating power of the gas, while several of the burners tested gave only one-quarter the proper light of the gas.

These facts and many others which came to their knowledge proved to the referees that "an enormous waste of gas prevails, with a corresponding pecuniary loss to the public."

London pays \$10,000,000 per annum for gas, and the referees believe that one-fourth this sum may be saved by the use of good burners.

CURIOSITIES OF MOTION.—Is any change operated on a man by a change in the velocity of his motion round the axis of the earth? Suppose, for instance, a dweller in latitude 60 were to suddenly change his residence to the Equator, he would double his velocity. For while at latitude 60, he travels round with the earth at the rate of 500 miles an hour, at the Equator he does 1,000 miles an hour. Again, at latitude 72 the Greenlander is lazily carried round a paltry 130 miles an hour—while the man at the North Pole calmly revolves about once in 34 hours. Of course the motion is unfelt, because all things move together; but the change from the tropical to an arctic climate is so great that it may possibly produce physical or mental effects of which we are as yet unconscious. Of course the steering of a ship from north to south must be sensibly effected by the constant acceleration from west to east. On the long railways of Russia, too, I believe it is found that the rails are uniformly more worn on one side than on the other, in consequence of this force.—*Gentlemen's Magazine.*

FILTERING WATER ON A LARGE SCALE.—All the water companies of London are compelled by law to filter the water which they supply to the city, from the Thames and the sea. The only exemption from this rule is the Kirt Co., which obtains its supplies from deep wells, penetrating the chalk formation. The filtering layer through which all this water runs is six feet thick, composed chiefly of sand.

THERE are three gatherings of coffee in a year in Brazil. Nothing is more beautiful than a coffee plantation in full bloom. The snowy blossoms all burst forth simultaneously, and the fields seem covered with a delicate mantle of white which exhales a fragrance not unworthy of Eden. But the beauty is ephemeral, for the snow white flowers and the delightful odor passes away in twenty-four hours.

GOOD HEALTH.

A Simple Remedy for Dandruff.

There are doubtless few persons, especially among gentlemen, who do not suffer from the inconvenience of dandruff. Physicians seem to consider it not of sufficient importance to engage their attention, and the poor victims are left either to practice their virtue of endurance, or for a cure, to try some of the many nostrums advertised in public prints.

The intolerable itching which frequently accompanies the troublesome complaint, is not the only unpleasant feature, as to persons of any pretensions to neatness, the appearance of the white scales on the coat collar and shoulders is very objectionable.

The writer, during a number of years, tried the different alcoholic solutions of castor oil and many other preparations without permanent benefit, and as a last resort, was led to adopt the plan of cleansing the scalp with borax and carbonate of potassa. This proved effectual, but after a persistent treatment of some months the hair became sensibly thinner, and perhaps would soon have disappeared altogether. The belief that dandruff arises from a disease of the skin, although physicians do not seem to agree on this point, and the knowledge that the use of sulphur is frequently attended with very happy results in such diseases, induced me to try it in my own case. A preparation of one ounce flowers of sulphur and one quart of water was made. The clear liquid was poured off, after the mixture had been repeatedly agitated during the intervals of a few hours, and the head saturated with this every morning.

In a few weeks every trace of dandruff had disappeared, the hair became soft and glossy, and now, after a discontinuance of the treatment for eighteen months, there is no indication of the return of the disease. I do not pretend to explain the *modus operandi* of the treatment, for it is well known that sublimed sulphur is almost or wholly insoluble, and the liquid used was destitute of taste, color or smell. The effects speak for itself. Other persons to whom it has been recommended have had the same results, and I communicate the result of my experiments in the belief that it may be valuable and acceptable to many who have suffered in the same manner as myself.—*American Journal of Pharmacy.*

FAILURE OF CUNDURANGO IN ENGLAND.—All that we hear of the results of the trials given to the cundurango bark furnished by our Government to the Middlesex and St. Bartholomew's Hospitals, through the College of Physicians, confirms the fear that any hope which might have been entertained, of a confirmation of the statement of its utility as a remedy in cancer, must be entirely dismissed. Physiologically, it appears to be practically inert, and its therapeutic effects in the treatment of the cancer to be nil. It furnishes a slightly bitter extract of feeble character. A detailed therapeutical report will be made by Mr. Hulke, and a careful examination of its physiological action by Dr. Brunton, but this mainly in deference rather to the official sources from which this small supply has been furnished, and to set at rest the excitement caused by the somewhat scandalous claims which have been set up in its favor.—*British Journal.*

THE NEW STIMULANT.—Chloral drinking, according to the physicians, is superseding absinthe, opium and alcoholic stimulants among the better classes. An insidious sedative, its use grows more dangerously on the tippler, than more actively intoxicating drinks. The manufacture of this drug is the best evidence of the extent of its use. In Europe, its production has become one of the leading chemical industries, and it is sold by the ton. Baron Liebig affirms that one German chemist manufactures and sells half a ton a week. The London *Spectator* says: "Taking chloral is the new and popular vice particularly among women, and is doing at least as much harm as alcohol. The drug is kept in thousands of dressing cases, and those who begin its use often grow so addicted to it that they pass their lives in a sort of contented stupefaction. Chloral drunkards will soon be an admitted variety of the species."

THE LUNGS.—If every cell in the lungs were cut open and spread out on a wall, they would cover a space of twelve yards each way; that is, at every full breath, the air drawn in is spread over a surface of one hundred and fifty yards.

Japanese Carpenters.

The Japanese carpenters are ingenious workmen, and their work is done with marvelous neatness. A curious feature of their houses is that they do not contain a nail; all of the joints and timbers being dovetailed together by many ingenious devices; and the whole work even to the rafters, is as smooth as if it had been polished down with sand-paper. And the Japanese are a neat people; for they use no paint to hide any blemish of construction or ornamentation, no fligree work or plaster of Paris gew-gaws, but every stick in the building is exposed. Every morning, as regularly as she cooks the breakfast or sweeps the floor, the Japanese housewife takes a wet cloth and scours the whole interior of the dwelling, leaving no part untouched, and no stain or dirt-spot to mark its cleanly appearance. Then the Japanese do not come into the house with muddy boots, after the style of the American sovereign; but, having covered the floor with neat matting, always remove the dirty sandals before stepping upon it. I stood and watched the Japanese carpenters at their work for some minutes, and noticed the peculiarity of their movements. The Japanese carpenter works toward him—that is, instead of shoving a plane upon the board at arm's length, he pulls it toward him; and he cuts, saws, and chops in the same way. His saws are fixed in handles like a butcher's cleaver, and the teeth slant or rake toward the handle. The planes are constructed like ours; but the wooden portion is very thin and wide. The adze is fastened to the end of a hooped stick, like the handle of one of the crooked canes worn on the arm on our streets; and altogether their tools are different from ours, yet I cannot observe that they are awkward in appearance, or awkwardly handled.—*American Manufacturer.*

ELDER JOHN STRONG.—Probably the largest family in the country, of one original lineage, is the Strong Family. Its founder, Elder John Strong, Ruling Elder of the First Congregational Church of this town, who died April 14, 1699, aged 94 years, had 18 children, of whom 15 had families, most of them large, and some of them nearly as large as their father's. What mammoth mince pies our grandmothers must have made! Their descendants, each and all, have been traced down carefully to the present time, to the number of over 22,000. Their genealogy, costing four years of solid toil, (from 10 to 12 hours daily) involving the expenditure of several thousands of dollars, has been traced by Benj. Woodbridge Dwight, and now issued in two large volumes. Among the representative family likenesses in these books, may be found those of Gov. Caleb Strong, Prof. Theo. Strong, of Rutgers College, N. J., Hon. Edw. Southworth, Prof. James D. Dana, and Rev. Dr. Dorus Clark.—*Northampton (Mass.) Gazette & Courier.*

STARCH.—There seems to be among the imports into our State none so needless as that of starch. With soil that produces so bounteous a yield of the raw material, California should be exporting instead of importing it. Other States with less advantages ship starch to foreign ports while we import over \$150,000 worth per annum. A late Indianapolis paper announces the shipment from that city of two thousand boxes of starch to Liverpool via New York. California could land it in Liverpool at an equal if not lower cost for freight than Indianapolis, and certainly our advantages for cheap manufacture will enable us to furnish it ready for shipment at a much cheaper rate. We wonder that some of our farmers have not ere this started a co-operative starch factory to dispose of their surplus produce.

A LIVE FISH EMBEDDED IN ICE.—A small fish, imbedded in ice, was found by some workmen engaged in taking ice from the Humboldt to fill the ice-house of Mr. Haynes. The little fellow was solidly encased in ice as clear as crystal, and when placed in water and the ice gradually melted from about it, its rigidity left, the tail quivered, and after turning over a few times it swam away as if nothing had happened. How long his minnow-ship had been thus housed is not known but probably not less than two months. It is now a companion of the gold fish at Haynes' saloon.—*Ex.*

The doctrine that guano is the deposit or excreta of birds is put sadly at fault by the discovery of large deposits at the bottom of the ocean, showing that it is a stratified deposit of plants and animals of marine origin.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, March 2, 1872.

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Catalogues Received.

R. H. Allen & Co.'s retail priced catalogue of garden, flower and field seeds and grain. Also their wholesale price list. Nos. 139 and 191 Water street, New York.

Richardson & Gould's preliminary seed catalogue for 1872. No. 245 Broadway, New York.

Hovey & Co.'s illustrated guide to the flower and vegetable garden and catalogue of seeds. A finely illustrated annual. No. 53 North Market street, Boston, Mass.

Hoopes, Brother & Thomas, Cherry Hill Nurseries, West Chester, Pa. Semi-annual trade list for spring of 1872.

CATALOGUE OF STOCK.—We have received a finely printed and neatly embellished catalogue of C. C. & R. H. Parks, of Glen Flora Stock-Breeding Farm, Waukegan, Ill., which can be examined by any one who may wish to know of the rare qualities of the stock to be sold by them at auction March 13th, at Waukegan, 35 miles north of Chicago.

COMPLIMENTARY.—From F. C. Johnson, Vice-President Indiana State Horticultural Society, we have received the Annual Report of said Society.

From Jay Cook & Co., maps and documents pertaining to the route, resources, progress and business of the "New North West" and its great thoroughfare, the Northern Pacific Railroad.

CORK OAK.—Received too late for this number, a communication from J. W., of Watsonville, regarding the Cork Oak, and Chincona or Peruvian Bark Tree.

CORRESPONDENCE.—Letter received from W. A. C., of Deer Lodge, Montana, on the subject of Cashmere Goat growing for that country, will receive attention.

Talk with a Silk Grower.

We have been favored with a call from Mr. H. G. Ballou of Sacramento, a practical silk grower, whose address, however, for the coming summer will be Lockford, San Joaquin Co., to which place he goes to take charge of a large silk growing establishment.

Mr. B. showed us specimens of cocoons of a new and peculiar variety, at least new to general culture in California, though there are a few growers already who have it. It is called the Syrian silkworm, though the place of its origin is not positively known. Eggs of this variety were obtained both from Salt Lake City in Utah and from North Carolina. It differs from the other varieties in the shape of the cocoon, the size and outline being, with hardly an exception of one in a hundred as here presented.

It will be noticed as being very pointed at one end, and is never peanut-shaped and seldom double. The cocoons show a silk of remarkable lustre, with a fibre of great elasticity and strength, which from actual test is found to be four times the strength of the French annual.



Yield of Cocoons.

California-grown cocoons of this variety have been weighed and reeled, and produced the remarkable yield of one pound of reeled silk from four pounds and a small fraction of cocoons. Mr. Edward Muller of Nevada City, having grown of this variety, better cocoons than any yet seen from Utah or North Carolina. But the most remarkable feature of these cocoons is, that the entire fibre from first to last, can be reeled or unwound, entirely dry; you have but to remove the floss, catch the end and the whole can be unwound as you would a ball of twine and without breaking. Of this variety grown for five years by one person in Utah, there has never been known a single sick worm.

Feeding the Worms.

Mr. B. would impress upon the minds of California silk growers, the importance of early feeding, before the extreme heat of the season comes on. Experience has taught him that 95 degs. Fah. is the point of danger to the worms, and that 100 degs. and over is fatal. He has examined the records of Dr. Logan of Sacramento, for the last 20 years, and finds that the degree of heat fatal to the worms, has never occurred before the last of May or first of June. He would, therefore, recommend that the feeding be always finished by the 20th of May, at the latest, and earlier if possible, in a climate like that of Sacramento, or wherever the heat attains to 95 degs. and upwards; and on very dry and hot days though the heat be less than 95 degs., would sprinkle the floor of the cocoonery two or three times during the heat of the day.

Cost of Production.

The results obtained by Mr. B. are from his own personal experience, and is confident of what he affirms, as to the cost of producing silkworm eggs and silk; and he puts the cost of labor necessary to produce an ounce of eggs for the market, counting labor at one dollar per day, at not to exceed fifty cents. This does not include cost of cocoonery, mulberry trees or interest on capital; simply the labor to pick the leaves, feed the worms and produce the eggs ready for sale. He also gives as reliable data, that cocoons can be produced at one dollar per pound and even less.

Mr. B. would feed Multicaulis in the early part of the season, as it is earlier in producing leaves; but considers the Alba and Moretti superior for maturing the worms.

FOREST TREES.—A correspondent, J. H. C., suggests, as a means of increasing their growth in timberless land, that the United States Government pass a law that in all future sales of public land, a clause shall be inserted in the title deed, compelling the settler to plant—and maintain—so many trees per acre within a given period. Also, that in case any more lands are given to railroads, the company shall be compelled to insert a similar clause in all their sales to purchasers.

THE RURAL FIRST.—An old subscriber whose head is clear on the subject of agricultural and other papers, writing us from Wheatville, Texas, says:—Send me again the RURAL PRESS from the 1st of January. I am sorry I let my subscription run out. I take several papers, but the RURAL is always the first one read.

The Largest Vineyard in California.

The largest vineyard in California is the Buena Vista, in Sonoma County, where there are 500 acres of vines. The whole tract belonging to the Buena Vista Vinicultural Society, covers some 6,000 acres, on which there are several creeks, and sulphur, iron and soda springs. An avenue a mile long leads to the houses, and on both sides are planted three rows of locust and mulberry trees. Of the latter there are some 3,000 exclusive of cuttings. The dwellings, men's quarters, carpenter shop, blacksmith shop, stable, etc., are all separated so as to prevent the possibility of a heavy loss by fire. The company make different classes of red and white wine, and 160,000 gallons were produced there in 1871. Sparkling wines are made with the foreign varieties of grape. The press house near a hill is three stories high and 100 feet square. The grapes are brought around on the side of the hill and crushed in the upper story while the juice is carried by pipes to the vats below. From this house three tunnels or cellars 100 feet long each, are run into the hill for the purpose of storing the wine. The champagne house is also three stories high and from it are two long tunnels running into the hill containing at present about 60,000 bottles of sparkling wine.

On one side of the creek, near the press house, is the cooper shop, where all the casks, which are made from the best Eastern wood, are put together, and on the other side is the distillery where the brandy is made. In the press house cellars are large tanks holding from 1,000 to 2,000 gallons each where they have wine from the vintage of 1866 to date. Tunnel No. 3 is what they facetiously term the "library," where they have casks of different kinds of wine of a variety of ages for the visitors to sample. On the main creek is the Willow House where all the champagne baskets are made from willows grown on the ranch. They employ from 40 to 100 men according to the season, and have at present 46 at work. Every department has its "boss," who brings his report nightly to the superintendent, Mr. E. P. Cutter. The manager of the cellars is Mr. A. Ketz. There are at present about 230,000 gallons of wine in the big cellar.

The property is owned by a stock company, of which O. C. Pratt, C. Christiansen, W. C. Ralston, John Bensley, Jos. Donohue, Robt. Johnson, W. M. Rockwell, Chas. Baum, and B. F. Auger are Trustees, and Auger & Christiansen, Battery street, are agents. We have seen some splendidly executed photographic views, by E. J. Muybridge, representing a vintage in California, taken at Buena Vista recently. They represent a very fine distant view of the vineyard, where they are transplanting the young vine; a spirited scene of where the men are picking the grapes and putting them in the boxes and on to the wagons; loading the grapes to the press house, with a view of the dwellings; the press house and cellars; the men engaged in bottling, labelling, disgorging the sediment and recorking the sparkling wine; a general view and a number of small views. The principal ones are large, fit for framing and give a good idea of how the whole process, of making the wine is carried on. They may be seen at C. G. Ewings, No. 111 Montgomery street, in this city.

TREAT THE COWS KINDLY.—There are too many who exhibit a roughness of treatment towards the cow; and yet no domestic animals are more sensitive, or more quickly feel the unkindness shown them. They can be made docile and mild in their dispositions or timid and wild, just in accordance with the treatment they receive from the herder and milker; and it is a well-established fact that a cow will transmit her disposition in a great degree to her progeny. A rough, quick-tempered person should never be employed as a milker; and one who will on any pretence whatever kick or strike a cow, should be kicked in turn, from the barnyard into the street, and never be allowed to return. Gentleness will increase the quantity of milk, as has been shown by a change of a cruel and irascible milker to one who practiced kind and gentle treatment. It is an injury to cows to be driven faster than an easy walk, to or from their pastures. To be urged on by thoughtless boys, and these perhaps on horseback, is to produce a fever and heating of the blood which is sure to dry up or lessen the flow of milk. Cows should always be made as comfortable as possible, summer and winter; it pays to do it.

Sweet Potatoes.

In answer to a correspondent, J. S., of Monterey county, we give the following as the result of practical experience in the growing of the sweet potato. The most favorable localities in Middle California are undoubtedly the higher alluviums of the rivers, along their banks, where the soil is a light, rich, sandy loam; but any rich, sandy loam will answer if sufficiently moist. About the first of March put the seed potatoes whole, in a hot bed, or in a warm exposure where frost cannot touch them, should it occur. A hot bed if only covered by white cloth is better than the open air. The soil of the bed should be a light friable mold; cover the potatoes four or five inches deep, keep the bed moist but not wet. They will soon sprout and send up a multitude of stalks or sets as they are called.

Let these grow until all danger of frost is passed, say the middle of April or sooner if the climate will permit. Prepare the ground by deep and thorough plowing; harrow down the surface; mark off the ground into rows three feet apart. Now go to your hot bed, commencing on one side, and carefully remove the soil down to the potato, and break or pull off the growing shoots, leaving the potato to send up more shoots, which it will soon do on being again covered and treated as before. Plant out these shoots or slips 18 inches apart in the rows, one in a place, setting them down in the soil deep enough to find permanent moisture, cultivate by keeping the surface free from weeds till the rapidly spreading vines cover the whole ground and but few weeds will put in an appearance after. Gather when large enough for use, but the main crop should be allowed to fully mature before being dug.

Sometimes when the object is to get unusually large potatoes, instead of pulling off and setting out the slips, the potato is lifted out and with every slip a small piece of the potato is cut out and planted with the slip. This method will bring the earliest potatoes, but the number of sets are many less than though the potato be allowed to remain in bed for their continued production. In good soil and with proper culture, it is usually a very productive, and oftentimes a very remunerative crop.

Weeding with Fire.

Market gardeners are well aware that in all old garden grounds, which have been annually manured from the stables, where hay from all manner of grasses has been fed to animals, that large numbers and many varieties of weeds will start in all their newly planted grounds, before the seeds of the vegetables they have planted or sown appear above the surface; and particularly is this the case where the ground has been prepared, and then allowed to remain two or three days before the seed you wish to propagate is sown.

This always makes the first weeding a slow and tedious process, and the plants being very small, are liable to be pulled up or injured by the pulling of the weeds. A very successful and satisfactory method of treating onions beds or grounds sown with many other varieties of seeds is, after the seeds are sown, watch the ground carefully from day to day about the time it is expected the young plants will appear at the surface, and when they do begin to put in an appearance, by lifting the earth directly over the seed—the whole surface being now perhaps covered with small weeds—take a time in the day when the wind is blowing and cover the whole surface of the ground with as thin a layer of straw or dry, light hay, as can be, and secure a successful burning.

Now set it on fire on the windward side, and as it sweeps over the surface it destroys every weed that has made an appearance above ground, and without the least injury to the onion or other plants thus treated. In two days after, the desired crop will be beautifully up and not a weed among it, and in another week will be quite out of the way of any weeds that may make their appearance. The plan is particularly applicable to the onion, but can be practiced on any other crop with success, where the coming up of the seed can be detected a day or two before its appearance above ground. Thus at least one weeding and a difficult one is entirely saved.

SHADE TREES.—The special advertisement of shade trees in Sacramento, published in our columns lately, is by J. S. Harbison, who it will be seen has a goodly variety.

The Wine Interest.

Now that there is organized in the State a permanent association for the collection and dissemination of knowledge on the subjects connected with all the departments of the wine industries—and that association is to hold annual exhibitions of the products of the vine, for the purpose of testing and comparing those products and determining their relative degrees of excellence, we venture to make the following

Suggestions.

A mere comparison of the wines produced by different individuals in different portions of the State by a committee appointed for that purpose, and the award of a premium to that which the committee may deem the best, without requiring any history or facts connected with the grapes from which the samples are produced, or with the making and handling of the wine itself, is very unsatisfactory and of but little practical benefit to the wine industry. To render an exhibition of wines and brandies of value, it should be required that every sample competing for a premium should be accompanied with a true statement, of kinds of grape used, the nature and quality of soil upon which they are grown, the age and manner of cultivating and pruning the vines, the time of picking the grapes as to ripeness, the mode of pressing, fermenting, handling and clarifying the wine, and all other facts and secrets connected with its production. The same requirements should be enforced with reference to samples of brandy exhibited. Then to avoid any prejudice or favor acting on the minds of the committee, the samples should all be emptied from the owners' bottles into bottles of a uniform make, and all marks and numbers should remain unknown to the committee. The committee should not be allowed to test more than one kind of wine at a session, and should be required to write out in full the reasons for their opinions and awards, drawing comparisons between the samples tested.

Committee of the Whole.

After the regular committee selected to judge of the samples and award premiums have had their session and before they have made their action public, it would be well and very satisfactory to exhibitors, if a committee of the whole were to be formed consisting of all the exhibitors competing in the class, to whom the samples should be submitted in the same style of bottles and under the same rules and regulations as to reasons for preference and award of premium.

An exhibition and comparison of the wines of the State under such rules and restrictions, once in every year, could hardly fail of proving of great value to wine industry. It would become a valuable and practical school to all who should participate in it and would have a greater influence in rendering uniform the modes of manufacture, and in elevating the character of our wines and brandies both at home and abroad, than any other action that has been or can be inaugurated by the vine-growers. We commend these suggestions to the Board of Directors of the Wine Growers' and Wine and Brandy Manufacturers' Association when they come to make up the premium list, and adopt rules for the exhibition they are to hold in connection with the State Fair in September next.

BLUE GUM TREE.—A subscriber wishes to know how to plant blue gum tree seeds. An experienced grower of this tree who has, we should think, thousands of one and two year old trees on hand, says: Plant in a frame, under glass or in hot houses, in fine, soft mould, as shallow as possible and cover the seeds. His way is to sow the dry seeds upon the surface, and then with the palm of his hand and fingers gently rub and stir the soil till the seeds appear to be all covered. Keep the ground moist but not wet, too much water or too deep a covering will rot them.

They will be up in 14 days, and when 4 or 5 inches high, transplant to pots for one year, or to the open field, if proper care and protection can be given them.

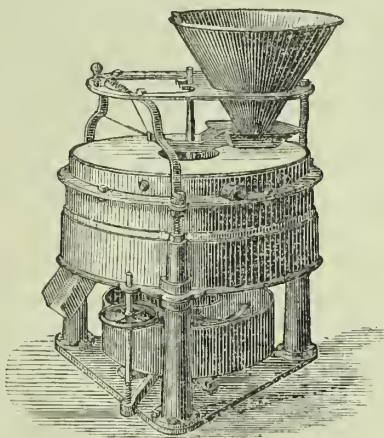
THE California Cotton Growers' and Manufacturers' Association have had consigned to them from Mississippi some hundreds of bushels of the most approved varieties of cotton seed planted in that State, amongst which is the McShane variety, one bale of cotton from which brought \$3,000 premium at the State Fair last year.

Travis and Wagner's Portable Mill.

Our illustration represents a portable mill in a convenient form, for grinding either quartz or grain. There are two burr stones, the upper one of which is stationary and the lower one arranged so that it may be raised or lowered by means of a convenient screw so as to meet the upper stone and grind either coarse or fine. As the stones wear away the screw raises the lower one as far as required, and when its length will no longer admit, a set of screws are loosened above and the upper stone is lowered to meet the lower one. The stone is raised by a perpendicular lift by means of a lever attached to a screw.

It can be regulated at will so as to admit of grinding quartz, grain, spices, etc., fine or coarse. The self-feeding apparatus is arranged so that every revolution of the stone shakes the feeding shoe twice. The oil bush holds sufficient oil so that it will lubricate the shaft for three months without renewal. The hopper may be regulated to feed fast or slow as required.

Different sizes of this mill are made and will be found convenient either around a quartz mill or upon a farm. Those in-



Travis and Wagner's Portable Mill.

tended for grinding quartz are made with very hard stones so as to ensure durability. The mills are manufactured by Travis & Wagner, who may be addressed at No. 41 First street, in this City.

Silk Culture.

We have received a letter of inquiry from L. P. who desires information on the subject of silk growing; the kind of land best adapted to the growth of the mulberry; the best varieties to cultivate; the distance to be observed in planting, where a permanent plantation is proposed; the proper size of cocoeneries, etc., etc. We would have been glad to have given his letter of inquiry in full, but our space will not admit, and allow of us giving such answers as he desires. The nature of the questions, therefore, must be imagined from a reading of

Our Answer.

Without assuming to be the factotum our correspondent would credit us with being, we have, nevertheless, given the subject of silk culture in California, a degree of thoughtful attention second to no other agricultural industry. We believe it is not yet sufficiently developed to assure us of its complete success on a large scale, as compared with the wheat or wine crop of the State, and therefore, requiring a more thoughtful consideration and careful investigation of losses and successes and their causes, before we can set it down in our mind as a firmly established, regular and lucrative industry.

It requires no argument, no further experiment to settle the question of wine growing as being a great and valuable interest in California. There has never been a year of failure with the vintage. Not so with silk culture; almost every year has brought its successes in a few instances, but disastrous failures have rather been the rule than the exception. Yet we hope to see this industry as firmly rooted in the soil of California, as either wheat growing or wine making.

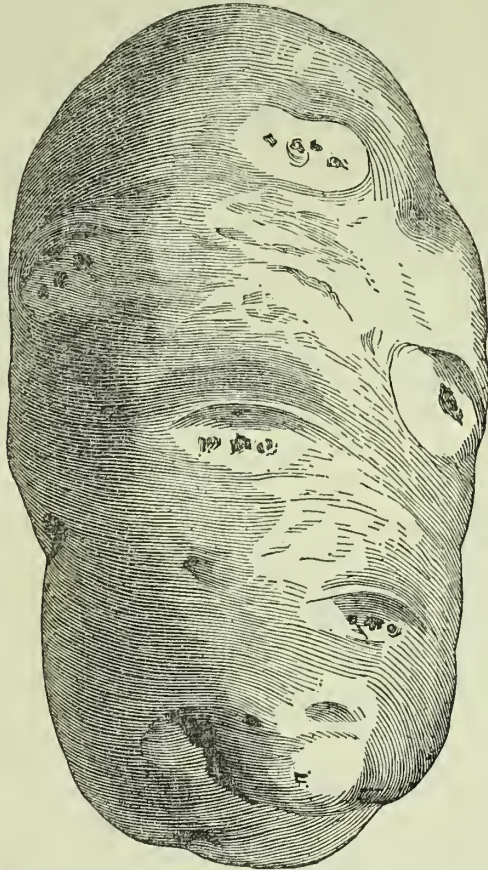
Suitable Soils.

But to the questions of our correspondent. Any good soil suitable for an apple orchard, will be found equally valuable for the growth of the mulberry. Of the three varieties of

the mulberry you name, plant the Alba and Moretti, both are excellent; but not a single Multicaulis, if the object is the production of silk; it will answer to keep worms alive upon and sometimes enable them to make a fair ordinary cocoon, but you cannot rely upon it; whilst upon the other two kinds, you can, provided the worms are of healthy stock and the weather is propitious.

Where to Get Trees.

As to where the trees can be obtained we cannot answer you, we know of no Morus Alba or Moretti for sale by any grower in California, except those who advertise with us. If obtained and you would plant in orchard form, set the trees twelve feet apart each way; keep them well headed down; forming a pyramidal tree with the branches one foot from the surface of the ground, forming a broad base at bottom with a somewhat rounded apex at top; then the entire tree will receive the sunlight



about equally all around, and all the outside leaves will fully mature, and none but well ripened leaves should ever be fed to the silkworm, except in the very earliest stages of its growth.

Only a few leaves should be taken from the tree before the third year, and with the age of the tree, their value for feeding increases till the twelfth year or longer if at times judiciously headed back.

Large Cocoeneries.

We would not advise you to erect a large cocoonery at first, or when the trees are three years old; but let it be small, and if the "modern improvements" you speak of are expensive, leave them out. One or two rooms of your house will answer you for a cocoonery, commencing if you please the second year after setting your trees; try your hand and skill with a few thousand worms, and let your experience from year to year be your guide for the following year, until you satisfy yourself whether a cocoonery on a large scale is warranted by your success.

In all countries where silk is raised, either in large or small quantities, it is always emphatically a home industry, occupying the time and labor of the very young and very old, together with nearly every female of the family for about sixty days in the year, a single hatching requiring from thirty to forty days to perfect their cocoons. And the great annual silk yield of the world is made up by the aggregation of these small family workings.

Small Cocoeneries Successful.

Large cocoeneries have been established from time to time in all silk-growing countries, only to be after a few years of trial abandoned. It would seem that it is almost impossible to grow a very large number of silkworms in one grand family, as it is to raise or keep hens together in large numbers.

Why this is, we are not fully prepared to say now; but we do know that whilst almost any farmer can keep fifty hens without losing ten per cent. annually, just as certain as he attempts to try his hand with five hundred or a thousand, he will lose half; sometimes more, and it is precisely the same with silkworms.

Very large cocoeneries with many millions of worms, are seldom if ever a success. Now though we certainly wish all success to the silk industry in California, we would never advise a friend to make the silk-growing business a specialty; but rather as an adjunct to other farming operations.

Early Rose Potato.

We seldom find a single potato worth the cost of an engraving, but if we can command the attention of our readers to this admirable variety, any better by thus illustrating its shape and size, we are very willingly to do it. Among its superior qualities are these: It is two weeks earlier than any other known variety; it is the most productive of any of the early kinds; more uniformly of a good size, with a thin yet tough skin; it is very smooth having but few and very shallow eyes; its flesh is white, solid and brittle; boils quickly, is mealy and delicious, and is adapted to any soil where the common potato will grow.

It originated from the seed of the Garnet Chili, and was first brought to public notice in 1867. Testimonials of its superior excel-

lence are numerous, both from the Atlantic States and California. It has been tried on Sherman Island and found to sustain admirably its Eastern reputation. It is undoubtedly the earliest to attain a large size and perfect maturity of any potato known, and is therefore justly estimated as one of the best varieties for family and table use ever introduced to the notice of the growers of potatoes.

If our farmers would bear in mind that the superior varieties they cultivate, often bring double the price of inferior ones, and with no more cost for cultivation, they would give greater attention to the procuring of new and improved varieties. The natural law that like produces like, or has a tendency to produce like, holds as true with the vegetable as with the animal kingdom, and yet improvement upon old breeds of animals and old sorts of vegetables, is in the order of the world's progress. Try this potato and you will be pleased that we have in this way drawn your attention to it.

The potato disease that for so many years prevailed throughout all Europe as well as the United States, stimulated culturists to the production of new varieties, and one of the happiest results is seen in the giving to the world a potato, excellent in quality and never affected by the

long prevalent disease. We are indebted to Messrs. Knapp & Grant for the illustration here given of this new and highly approved variety of early potato, which firm has them for sale.

Gypsum for Killing Sorrel, Etc.

EDITORS PRESS:—I see by an old copy of the PACIFIC RURAL PRESS, that a farmer wrote to know if gypsum will really kill out sorrel. I can say that it positively will in New York State, and I have no doubt it will do the same in the Pacific States; although I have had no occasion to try it here. My father, in Ragan Co., N. Y., cleared 30 acres of mowing land from sorrel in about three years, sowing two bushels (or about 200 lbs) to the acre, alternating crops of grain with clover or other grass.

I am also knowing to the fact that one farmer who sowed gypsum on his wheat land in Sonoma County, last year, got 70 sacks to the acre, the berry being very plump. The ranch adjoining yielded only 25 sacks to the acre, without this fertilizer. Another ranch adjoining the latter, fertilized with gypsum, gave 40 sacks to the acre.

Gypsum has not been much used in this State, but I know of its application to potato land, to fruit and other trees, and for vineyards. The yield of grapes was increased one third, and much improved in size. Trees seem to thrive with much less irrigation when plentifully supplied with plaster. If some one will supply the San Francisco market with gypsum at a low price, until the farmers find out its value, the demand for it for this coast will become immense, or I am no

SEER.

REMARKS:—We know the above information is given by one who seeks only to honestly and correctly inform our readers. The correspondent who wished to know of us if a mine of gypsum would be valuable in this State should make a note of this.—EDS. PRESS.

ELEVATOR.—Bradley & Rulofson, the enterprising photographers, No. 424 Montgomery street, have added to their other improvements a patent hydraulic elevator, by means of which ladies and gentlemen are carried to the top of the building without any muscular exertion. They had a reception on the 24th inst., and many availed themselves of the occasion to take a ride.



Getting Up Stairs.

Hi! the baby is getting up stairs,
One step, two steps, three steps, slow,
Down she comes with a thump, thump, thump,
Mamma kisses the little blue bump,
Higher next time will the baby go,—
Mother-love watches her, high or low.

Life's a continual climbing up stairs;
What if, too eager, we tumble and fall?
Up again, try again, wiser each time,
Safely at last shall the brave feet climb,
Fear not to follow the rallying call,
God's dear love watches over us all.

A Very Useful Tree.

Boston has its liberty tree, Hartford its charter oak, Pittsfield its great elm, New York its Stuyvesant pear tree, and Seymour (Ind.) has its beech tree. It stands about two miles west of the town, just at the crossing of the country road and the O. and M. R. R. The trunk is covered pretty thickly with the names of persons who desired to go down to posterity in a cortical immortality associated with the tree, from which, under the auspices of Judge Lynch, six criminals were suspended.

I visited the beech tree not long since, and heard from some of the neighboring farmers its story. For years there had been no safety of life or property. Depredations were almost nightly. Several times the cars were run off the track at night; and the passengers, suddenly aroused from sleep, and helpless, were robbed by armed men in disguise. Repeatedly the marauders had run off from a train at the depot a locomotive with the baggage and express car attached; and, after reaching a secluded place, had robbed the express car. Not seldom, robbery was accompanied by murder.

No rational being had any doubt as to the authors of these acts. The universal instinct, stronger oftentimes and more unerring than legal evidence, pointed to the members of a single family and their confederates. But every effort to secure the execution of justice was fruitless. If the suspected were arrested, there was always a way of escape. Sometimes an *alibi* would be overwhelmingly proved by witnesses prepared to swear through a stone wall. If there were inconvenient adverse witnesses, they spirited away or bribed to absent themselves, or, if insensible to reason or persuasion, they were put out of the way by violence. Persons were found murdered, against whom there was no grudge or ground of offence save the fear they might prove impracticable witnesses.

At last the Hoosier spirit arose—a spirit patient, sluggish even, but when aroused acting in tremendous earnest and irresistible, as was eminently proved in the war. Another robbery of an express car had taken place, and three men charged with the offence were on their way by the cars to the county jail, to be tried and again released; and again, it may be, to retaliate on all who had been active in their arrest. A body of citizens stopped the train, took the men from the cars, and hanged them from the beech tree. Later, three more, under precisely similar circumstances, were hanged to the same tree. It was a ghastly incident of the affair that the tree stood within a stone's throw of a little house in which one of the prisoners had been born. His last gaze before he swung off into eternity was fixed upon the door about which he had played in his innocent childhood.

Later still, four more of the same band were taken from the jail and were hanged. Thus "stood up Phineas and executed judgment, and the plague was stayed." Acts of violence ceased, life and property became safe; threats of reprisal were muttered, but were never executed. To the good sense of the community the act justified itself from a conviction of its necessity and from an experience of its results.

"'Tis strange," muttered a young man as he staggered home from a supper party, "how evil communications corrupt good manners. I've been surrounded by tumblers all the evening, and now I'm a tumbler myself."

Music is an invisible dance.

A Mother's Love.

A thing immortal; Time can not change it; Death can not quench it; Eternity can not waste or destroy it! From the cradle to the grave it compasses us about, growing stronger when temptation besets us, becoming holier when adversity tries us, and more Godlike to save when the blackness of despair gathers its horrors around us. Forsaking us not, though deserted by all others, it clings to us with a spell which no charm can dissolve, with a strength which no power can sunder.

In the morning, at noonday, and at eventide it is always ours; and though the dear heart whose every throb was actuated by it is hushed in the bosom forever; though the once soulful eyes glow not with it now, and the mute lips breath it no more,—yea, though the coffin and the shroud, the cold clods of the valley, and the long grasses of many a year hide from our tear-bedimmed eyes the sweet form that was ever transfigured into angelic radiance by its presence, yet from the shores of the receding Past this mother-love drifts over to us with all the vividness of the days when she was with us; and it comes back to us from the beautiful Beyond, in its infinite tenderness still yearning over us, and bringing us hope as we struggle in the close contest of life.

Going not out forever, and setting not, 'tis a guiding-star by whose far-reaching light we may pilot our frail bark from billow on to billow across the stormy sea of Time, and anchor at last at the fadeless shore of a country whose mansions are Home indeed, hallowed and made pure by the prayerful vigils born of a mother's love.—*Frances Lamartine Keeler.*

Morbid Sorrow.

Too often it is the case that men remember their sorrow, and do not register their joy. But even under afflictions, if men did but know it, there are musical tones which might strike through the requiem's wail. There are lights that might illumine their dark, Rembrandtian sorrows. Men fall into a mania. Sorrow takes on a diseased form. It becomes morbid. It whets and stimulates itself. It ferments. It overflows. It tinges the whole mind from top to bottom with its color. As just after a drenching rain every twig on the tree is fringed with the drops, and every leaf weeps; and, as when some gust of wind strikes it the tree rains again, as if it were a cloud; so, when sad experience comes upon us, we are apt to be remorseless with ourselves, and to work upon our own susceptibilities. We do not put hope over against despair, and cheer over against gloom. Therefore much of the sufferings which men have in life, much of the gloom which they are under, results from the not using of themselves wisely. I see in many who come to me a morbid taste for suffering. It is a hideous form of excitement. Persons at last even come to a state in which they want to suffer—or rather, want to be thought to suffer. They want to reap in the fields of sympathy this abnormal, and, what seems to me, hideous praise of seeming to suffer. Sometimes no greater offense can be given than to compliment persons on their health, and happiness, and prosperity. For they are martyrs, and they walk under a cape of sadness; and not to recognize that, is to deny them the chief pleasure almost of their life. To be miserable is their joy! —*Beecher.*

DOMESTIC LIFE.—He cannot be an unhappy man who has the love and smiles of woman to accompany him in every department of life. The world may look dark and cheerless without—enemies may gather in his path—but when he returns to the fire-side and feels the tender love of woman, he forgets his cares and troubles, and is a comparatively happy man. He is but half prepared for his journey of life who takes not with him, to soothe and comfort him, that friend who will forsake him in no emergency—who will divide his sorrows—increase his joys—lift the evil from his heart and throw sunshine amid the darkest scenes. No, man cannot be miserable who has a companion, be he ever so poor, despised and trodden upon by the world.

FRESHMAN recitation rooms—Professor: "What instrument would you use in the construction of this geometrical figure?" Freshman (after looking thoughtfully at the floor, ceiling and Professor,) "A piece of chalk, sir."

A POET says: "Oh, she was fair, but sorrow left her traces there." What become of the rest of the harness he does not state.

Dickens and his Wife.

Gail Hamilton, in the *Independent*, thus discourses about one of the world's latest and dearest idols:

I have no tenderness for Mr. Dickens. I do not believe in his deep soul of truth and goodness, or in his noble and pure sympathy with what is highest and best. "I desire, in the most public and universal manner," to declare that a regiment of little Nells and Tiny Tims cannot redeem the man who publicly dishonors the mother of his many children. Mr. Dickens, holding the pen of a ready writer, told his story glibly to the world. Mrs. Dickens, suffering the deepest wound a woman can know, has remained steadfastly silent. The wife's silence is full of dignity; the husband's speech bristles with disgrace. He feels no shame in saying that he lived with a woman as his wife, exacting from her all the duties and enforcing all the suffering of a wife, until he had consumed all the vigor of her youth; and that he has then turned her away, and announces to the world that she was unfit for him! He feels no shame in saying, virtually, that while this woman was living in his house as his wife, another woman was also in his house, holding in regard both to himself and his children a position which belonged to the legal wife and mother. England is beating her obstinate head against marriage with a deceased wife's sister; but here it is a living wife's sister superseding the living wife. It was Mr. Dickens who made this public property. By his last will and testament he even stretched his dead hand out of the grave to injure his discarded wife; and neither in this world, nor the next, nor the world after the next, shall a man escape the cordial hatred of at least one heart for such coarse and shameless selfishness.

Home.

Home is the only place in all the world where hearts are sure of each other. It is the place of confidence. It is the place where we tear off that mask of guarded and suspicious coldness which the world forces us to wear in self-defence, and where we pour out the unreserved communication of full and confiding hearts. It is the spot where expressions of tenderness gush out without any sensation of awkwardness, and without any dread of ridicule. Let a man travel where he will, home is the place to which "his heart untrammelled fondly returns." He is to double all pleasures there. He is to divide all pain. A happy home is the single spot of rest which a man has upon earth for the cultivation of his noblest sensibilities.

LOVE OF THE BEAUTIFUL.—Place a young girl under the care of a kind-hearted woman, and she, unconsciously to herself, grows into a graceful young lady. Place a boy in the establishment of a thorough-going, straight-forward business man and the boy becomes a self-reliant, practical business man. Children are susceptible creatures, and circumstances, scenes and actions always impress. As you influence them, not by arbitrary rules, nor by stern example alone, but a thousand other ways that speak through beautiful forms, pretty pictures, etc., so they will grow. Teach your children then, to love the beautiful. Buy for them pretty pictures; and encourage them to decorate their rooms in his or her childish way. Give them an inch and they will go a mile. Allow them the privilege and they will make your home beautiful.

About Notables.

LUCRETIA MOTT is 70 years old; Victoria C. Woodhull, 47; Olive Logan, 45; and Anna Dickinson, 36.

MISS BRADDON, the novelist, has achieved eminent distinction and is yet but four years on the shady side of thirty.

AN Iowa girl has contracted to cut and clear 320 acres of timber land this winter.

ELM ORLOU, whose writings are being so extensively copied, is the wife of "Brick" Pomeroy.

A COUNTRY paper tells of a smart wife who helped her husband to raise seventy acres of wheat. The way she helped was to stand in the door-way and shake a broom at him when he sat down to rest.

There are a great many men in San Francisco, who, if they had such a wife, would never be found begging two bits for a breakfast.

When is a wheel like a person fatigued? When it is tired.

Young Folks' Column.

Bobolink.

Throat brimful of music—
Cannot keep it in;
Bless me! Wouldn't have you try;
"T'would almost be a sin. [times,
Should think 't'would choke you though, some-
The aperture's so small
That all this noise must struggle through,
Or not get out at all.

Swinging on the lily-cups,
Hiding in the clover,
Prince of comic vocalists,
Saucy little rover—
Give us a gem from Mozart;
A taste from Meyerbeer;
Or a moreau from Rossini,
Fit for cultivated ear.

Can not?—Well stop trying;
Your own wild notes are best,
Stick to the time you've practiced,
Never mind the rest;
Stretch your mouth to the utmost;
Pour forth your pearly song
Marred by no taint of by-gone grief,
Or shade of future wrong.

Home Politeness for Little Folks.

Parents, as soon as your little ones begin to totter about and speak, say lispingly, "ma" and "pa," that very instant teach them courtesy, good manners, to use correct language, chaste, delicate, refined, avoiding everything vulgar, uncouth, clownish, indelicate, or ungrammatical.

Even baby lips can be taught refinement, courtesy, politeness of manners, things delicate, tasteful, beautiful, heavenly—the little words "please" and "thank you," when favors are conferred; and far easier will they learn them than older children.

What is termed baby talk, when addressed to children old enough to understand and imitate it, is detestable. The parents must remember that when the child can comprehend one word its education is begun. The mother, especially, is called to officiate as professor of languages in the domestic university. But who, in teaching a foreigner the English language, would say to him that until he became further advanced he must call a horse a "horsey," and a dog a "bow wow," and that for the present he will address his maternal parent as his "mudder?" This seems sufficiently ridiculous; but this is not all—it would be unjust to the learner; it would teach him pronunciations which he must unlearn as laboriously as he learned them. You would thus, in fact, double his task. The folly and injustice are the same when you teach a little child to speak a distorted, mangled, burlesque language, of which it becomes ashamed when older and tries to unlearn it.

Little folks should be taught correct language as early as possible; not a slip of the tongue should pass without correction.

We advise all young people to acquire in early life the habit of using good language, both in speaking and writing, and to abandon forever the use of slang words and phrases, else the unfortunate victim of neglected education is very probably doomed to talk slang for life.

Wagtails.

Very pretty and graceful birds are the wagtails, or quake tails, as they are sometimes called, from a curious habit, common to the whole family, of constantly shaking or quivering their tails. The country people often call them dish washers, we suppose from their being so commonly found in or near water, on which they often seem to be walking when really they are stepping upon the weeds near the surface; they tread very lightly and rapidly, and every motion is full of grace and beauty. They seldom take long flights, but fly from place to place with a circular kind of motion, as if they were always at play. Beautiful creatures, with slender forms, straight thin bills, long legs and tail; their plumage black and white, shaded with gray, and tinged here and there with yellow, in some species much more distinct than in others.

Riddle.

My shape is a sphere, I am always in motion,
And present to view from land, air or ocean;
I'm solid and fluid, as none can deny—
And feminine called, I scarcely know why;
I seem quite inert, yet knowing ones say,
My heart is on fire in a literal way.

DOMESTIC ECONOMY.

A German Kitchen.

A German kitchen generally has but one window, and notwithstanding their proverbial neatness, in many things, the floor of the kitchen is generally as black as oil and coal can make it. This apartment, says a writer, in an exchange, is under the general supervision of the lady of the house, with various subordinates in rank and office. It is the seat of active operations from morning till night, as it is the custom here to eat five times a day.

As I passed the kitchen door this morning, I took a hasty inventory of stock on hand. On the stove I found a whole colony of coffee-pots. They were of various sizes and hues, each bearing evident traces of faithful service. Veterans they must have been, for they were variously maimed and mutilated, some destitute of a handle, others deprived of a nose, yet none of them faint-hearted or discouraged. I regret that I cannot give the exact number of the stalwart group, but when I had counted nine, my attention was called off to a more interesting group of beer-bottles quietly reposing in a basket near by. The stove boasts of one griddle, and a most serviceable piece of kitchen-furniture it is, too. Its services are called into requisition through the whole range of cooking, from beefsteak to dessert.

The first active scene of the day begins in the kitchen sometime in the morning, when a brisk broiling, frying, and steeping goes on. A German breakfast consists of coffee and bread. This is served with such delightful indefiniteness, that one scarcely knows whether he has taken breakfast or not. It has no stated time for beginning or ending, but begins any time, when any one feels inclined to commence it, and ends when there is no one to continue it. Never a dinner without soup and beer. A soup is a most extraordinary compound. Therein may be found anything in the line of vegetables which is indigenous to the soil, herbs of various qualities and flavors, the whole catalogue of spices, and other things "too numerous to mention." The eating of soup gives rise to a variety of pleasant emotions, aside from those produced upon the gustatory nerves. It produces a state of expectancy, and one would be thoroughly disappointed if something did not "turn up."

Cook your raisins before placing them in pies, cakes or puddings. Soaking them is not sufficient. Steaming them by pouring a small quantity of boiling water amongst them in a tightly closing dish, and allowing them plenty of time to cook before opening, is a good plan. When raisins are rightly cooked before using they appear plumper, and more palatable, and enough more healthful to be eaten without injury by most dyspeptics.

A GOOD SOUP.—Take a fresh meat bone of any kind and boil until the meat will readily fall to pieces, add pepper and salt for seasoning, potatoes peeled and cut, and a very little thickening, or if preferred put half a teaspoonful of rice in with your meat when first put on. Bread may be added when taken up, or have some biscuit rolled thin to lay around on the top when the potato is put in. Salt meat soup may be made in the same way by freshening the meat so that it will not make the soup too salt.

TO MAKE BEAN PORRIDGE.—Put one pint of beans to soak over night; the next morning put them to boil in a sufficient quantity of water for the porridge, with a corned beef bone to season the same; have one pint of corn hulled the day before, and add about two hours before the meat is done. When the meat is done tender take it out, make a little thickening for the porridge with Indian meal and a very little flour. Milk and pepper may be added when eaten, according to the taste.

SPITTOONS.—Some housekeepers refuse outright to have spittoons in their houses. Their severity in the matter is entirely pardonable, as the sight of them is never an agreeable one, no matter how fine the cuspidor may be. One of the best devices in use is the encased spittoon, resembling a small ottoman or foot-rest. A spring near the bottom is pressed by the foot, which raises the cover and the withdrawal of it allows it to fall again. Spittoons in use require daily cleaning.

East Indian Method of Cleaning Silver Ware.

It is the practice of East Indian jewelers never to touch silver and gold with any abrasive substance. The most delicate filigree work and wire constructions of silver are rendered snowy white by the very simple manipulation here communicated: Silver is most susceptible of spotting and discoloration by sea air, the human perspiration, the presence of sulphuretted hydrogen (as seen in an egg-spoon left uncleaned), the excreta of cockroaches and other strong-smelling insects, and lastly, by the contact of mice; the latter cause has irretrievably injured some new plated ware, never used, but left on a side board accessible to these little vermin. Cut some juicy lemon in slices; with these rub any large silver or plated article briskly, and leave it hidden by the slices in a pan for a few hours. For delicate jewelry the Indians cut a large lime nearly in half, and insert the ornament; they then close up the halves tightly, and put it away for a few hours. The articles are then to be removed, rinsed in two or three waters, and consigned to a saucepan of nearly boiling soapsuds, well stirred about, taken out, again brushed, rinsed and finally dried on a metal plate over hot water, finishing the process by a little rub of wash-leather (if smooth work). For very old, neglected, or corroded silver, I dip the article with a slow stirring motion in a rather weak solution of cyanide potass.; but this process requires care and practice, as it is by dissolving off the dirty silver you obtain the effect. Green tamarind pods (oxalate of potash) are greater detergents of gold and silver articles than lemons, and are much more employed by the artisan for removal of oxides and fire-marks.—*Watchmaker and Jeweler.*

HOUSEKEEPING IN GERMANY constitutes a special department of industry, and is called, "Haushalterung." Of course this industry is monopolized by the woman, and constitutes her chief glory in this land of poets and scholars. No young lady is regarded as having a finished education, unless she has spent at least one year in the house of some good family, learning Haushalterung.

SOAP.—A young lady, who makes all the family soap, gives the following recipe for a good, cheap article: Add to 10 quarts of water, 6 pounds of quicklime and 6 pounds common washing soda. Put all together, boil half an hour, and let it stand all night to clear. Draw off the lye, and add to it 1 pound common resin, and 7 pounds of fat. Boil this for half an hour, then let it stand till cool, and cut into bars.

A PREPARATION of one part calomel, five parts wheat flour, one part sugar, one-tenth part ultra-marine, mixed together in fine powder and placed in a dish, is said to be a most efficient poison for mice.

Domestic Receipts.

HONEY FRUIT CAKE.—Take four eggs, and well beat. Sieve in five cups of flour. Add two cups of honey, one of sweet milk, two teaspoons cream of tartar, one of soda, one pound of raisins and currants, one quarter of a pound of citron, one teaspoon each of cloves and cinnamon. Bake in large loaves and slow oven. This keeps fresh for months.

CHOCOLATE CAKE.—Take one cup sugar, one-half cup of butter, one-half cup milk, two eggs, one teaspoon saleratus, and two cups flour. Grate half a cake of the unsweetened chocolate (Baker's) and mix with one-half cup milk and the yolk of one egg. Sweeten to taste, and add a teaspoon of some flavoring extract—vanilla is nice. Boil this dissolved chocolate till soft, and then add with it the other ingredients, and bake three-quarters of an hour.

TO PREVENT MUCILAGE MOULDING.—C. C. writes the *Rural New Yorker*, that he makes it by using one part of alcohol and three parts of water to dissolve gum arabic; and he keeps a bottle of one part alcohol and two parts of water with which to thin it when it becomes too thick. It never molds.

ICING PASTRY.—When nearly baked enough, take the pastry out of the oven, and sift fine powdered sugar over it. Replace in the oven, and hold over it till the sugar is melted, a hot iron shovel. The above method is preferred for pastry to be eaten hot; for cold, beat up the whites of two eggs well, wash over the top of the pies with a brush, and sift over this a good coating of sugar; cause it to adhere to the egg and pie-crust; trundle over it a clean brush dipped in water, till the sugar is all moistened. Bake again for about ten minutes.



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15v23-3m

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Manufacturers of

Linseed and Castor Oils,

OIL OAKS AND MEAL.

Highest price paid for Flax Seed and Castor Beans delivered at our works.

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Works, King street, bet. Second and Third.

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Cylinder Churns,

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THE "BLANCHARD CHURN,"

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Douthett's Patent Dash Churns

HARDWOOD CHURNS,

Butter Workers, Etc.

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Nos. 118, 120 and 122 Front Street,

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We are the ONLY manufacturers of this line of goods on this coast, and having put our prices at MUCH LOWER figures than the same goods have ever been offered at before in this market, we solicit the custom of all who desire

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IMPROVED NOISELESS

Family Sewing Machine

IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

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Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

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R. IRELAND,

The old Pioneer Broom Factory—Established August, '56. No. 82 J street, between Third and Fourth, Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubs and Pails. 16v2-3m

Devons vs. Durhams.

EDS. PRESS:—On page 72 of your excellent paper, where you speak of Devons and Durhams, you seem to prefer the Devon to the Durham cattle, and so advise a correspondent, A. N. M., of Montana. I don't know what question had been asked you in relation to the different breeds, but I can assure you that the Durham short horns are hard to beat, either for beef or milk; and as I have tried both breeds, I desire to put in my plea in behalf of the large, fine formed, docile Durham, for any purpose that the rancher can desire good cattle for.

Napa Valley, Feb. 20th.

The question of our correspondent was, simply as to which breed would be the best for the rather thin, mountain pastures of Montana; at the same time that a fair yield of milk could be relied upon. These, we think, were the only two points presented, and yet we are quite sure that we are right in recommending the Devons as among the best of all imported breeds, for the general purposes of the farm. In support of our position, the *Rural Southland* comes to our aid in the following remarks on the Devon:

As an Ox for Labor.

It is for beef chiefly, says an exchange, that the Devons are now kept in England. It is in reference to this that the breed has been improved. Probably it is less valuable for labor and milk than it was before the propensity to fatten acquired its present ascendancy. But in this country one of the principal recommendations of the breed is the value of the oxen for labor. Hence, it is in those sections where oxen are worked to a considerable extent that the Devons have been mostly kept, though their hardiness and activity render them better fitted for exposure and for thin pasture than the Short-horns. No ox of his size equals the Devon in ability to labor; he is very active and strong for his weight. Youatt says: "Four good Devon steers will do as much work in the field or on the road as any three horses, and in as quick, and often quicker time."

It is not merely for the amount of work which the Devon ox performs that he is prized; the style in which he does it, his handsome form, fine color, graceful ear-riage, and the little attention he requires from his driver, all serve to enhance his value even as a beast of burden. In fact, but one objection is made to him, and that is, he lacks the weight which is required for the heaviest work. The objection as applicable to full-bloods, must be to some extent admitted; they are not generally as large as would be desirable for all kinds of work, though some of the breeds have size enough for any duty required of a working ox; and by attention to this point in the selection of breeding stock, there would be no difficulty in obtaining animals possessing the requisite weight and strength. The ordinary weight of oxen of this breed, in England, four or five years old, is 800 to 900 pounds, beef only; but show animals have attained the weight of 1,400 pounds, and upwards. In respect to quality of flesh, the Devons stand very high.

The Devon is Large Enough.

The above remarks are very just to the Devons in the main; but, perhaps, calculated to mislead Southern farmers who are not familiar with this noble breed of cattle when stating that the Devon ox "lacks the weight which is required for the heaviest work." The Devon ox is not a small animal, and can only be regarded as lacking in weight when compared to the large, lubbly Durham. As a work animal he is vastly superior to the Durham, at least in our Southern country, notwithstanding the difference of weight in favor of the latter. The Devons are the most compact and symmetrical in form of any of the bovine tribe with which we are acquainted, and their beautiful proportions make them appear smaller than they really are. Their usual weight, as given—800 to 900 pounds—shows that they have good size, and their great activity and powers of endurance, coupled with their gentleness and tractability, render them, *par excellence*, the breed for work cattle. This is not their only good quality. The cows are fair milkers as to quantity, while the quality is far above the average. As stated, they stand deservedly high as beef cattle.

As we have heretofore remarked, the Devons, for general purposes, surpass any breed of cattle that has ever been introduced into the Southern country.

The Sacramento Basin.

From the dome of the Capitol at Sacramento the expanse of water visible around, has more the appearance of a vast basin filled to the brim, than a fertile agricultural valley. It will be well for those who think it an easy matter to suggest a perfectly feasible plan for the reclamation of these low, valley lands, by a system of levees along the banks of the Sacramento river exclusively, and shutting off in many instances by dams the auxiliary drainage offered by the numerous sloughs that traverse the tule lands back from the river proper, to carefully examine and make a note of the enormous quantity of water to be displaced by drainage, before a large part of these lands can be made dry enough for the coming summer for successful culture.

Make a note also of the probable height of levee that would be required at this time, were all the water that now covers the valley, heaped up from both sides and deposited upon a base only as wide as the river bed. It is a mistake to suppose that any levee built at reasonable cost, can be made, that will hold all this great body of water set up as it were on edge. In every other country in the world where levees are built to confine large rivers from overflow, they are back from the banks at distances from one fourth to half a mile on either side. And where the country is lower at a distance from the river, than directly on its banks, wide artificial water courses with heavy embankments are constructed through the lowest of the grounds to serve as helpers to drainage during seasons of excessive overflow.

If such partly natural and partly artificial rivers are required in Italy to convey the waters of the Alps to the river Po, and they certainly are, may not the same principle be applied with equal benefit to the great Sacramento Basin and its surplus waters.

SPEAKING OF SUBSCRIPTIONS.—The proprietors of the *RURAL PRESS* are frequently obliged to submit to *inflexions* similar to the one following, which has just been thrust upon us; and yet evidently the result of a practiced eye, as regards the appearance of the *RURAL*, and a mind appreciative of its contents.

I wish to become a subscriber to the *PACIFIC RURAL PRESS*, and will thank you to forward it to me as long as the enclosed ten dollar legal-tender note will pay for it. I should like to have the subscription include your back numbers since October 28th last, that number included, if convenient. Otherwise, let it run from this time.

Louisville, Ky., Jan. 23, 1872.

REAPER AND MOWER SECTIONS.—The attention of farmers is particularly called to the California Manufacturing Co., with reference to their sections, a form of homo industry to which which we have frequently alluded as worthy of encouragement. In addition to the manufacture of reaper and mower sections and knives, complete for all machines in use, they turn out a considerable quantity of new files, and reent a large number of old ones, warranted equal to new, at a great saving in cost.

FISH CULTURE.—To C. C. A., of "Rock Creek," send to O. Judd & Co., New York, for "American Fish Culture," by Norris; or to Seth Green, who sells his own work, at Rochester, N. Y. For a good work—"Domesticated Trout"—send to L. Stone, Charleston, New Hampshire.

THE RURAL PRESS.—C. B. R., of San Diego, writes:—Continue to send me your excellent paper the *RURAL PRESS*, and tell us all you can about silk, raising and the ramio plant, to which this southern part of the State is peculiarly adapted.

IMPROVED BAKERY.—Weister & Co., No. 17 New Montgomery St., can furnish a new method of constructing furnaces for large bakeries worth examining into by those about building or remodeling. It is under Baker's patent, Dec. 5, 1871.

"BACK LOG STUDIES" in *Scribner's Monthly*, by Chas. D. Warner, author of "My Summer in a Garden," deserves special mention as being of the first order of magazine articles. No. 111 of the series appears in the March number of *Scribner*.

ANNUAL Catalogue of the officers and students for 1871-2, of the Massachusetts Institute of Technology, is at hand.

RECEIVED.—A communication on the "Wheat Worm," received and on file.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., Feb. 29.

FLOUR.—We note a fair local demand with a moderate inquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 1,500 do, Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.50@5.75; extra, in sacks, of 196 lbs. \$6.50@6.75. Standard Oregon brands, extra, may be quoted at \$6.00@6.37½. **WHEAT.**—The local demand has been light and there is not much inquiry for export. Sales aggregate 10,000 sacks fair to choice at \$2.10@2.22½ per 100 lbs. Quotable at close at \$2.00@2.20 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 3d. per cental. **BARLEY.**—Has been inactive during the week, under review. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.40 @1.55, which is the range at close.

OATS.—Demand has been limited during the week under review. Sales 4,000 sacks ordinary coast to choice bay, at \$1.55@1.75 per 100 lbs. which is the extreme at close.

CORN.—Is quotable at \$1.80@1.85 for yellow and \$2.15@2.25 for white per 100 lbs.

CORNMEAL.—Is quotable at \$2.50@3.00 per 100 lbs. from the mill.

BUCKWHEAT.—Is jobbing at \$2.23@2.40 per 100 lbs.

RYE.—According to quality is quotable at \$2.15@2.25 per 100 lbs.

STRAW.—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN.—Selling at \$25.00 per ton from the mill.

MIDDLINGS.—For feed, are selling at \$32.50 per ton from mills.

OIL CAKE MEAL.—In good demand at \$10 from the mill.

HAY.—Receipts have been light, and prices at close are \$15.00@22.00 for fair to choice per ton.

HONEY.—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$4 per doz.

POTATOES.—Receipts have been heavy during the past week. Range for best kinds is between 40@80c.

HOPS.—The range is 50@65c.

HIDES.—During past week 1,930 Cal. dry sold at 19@20 and 920 salted at 8½@9½; 730 dry murrain, 10@13c.

WOOL.—Speculators are already beginning to bargain for spring clip. We understand that the choice spring clip of Messrs. Haggin & Tevis, El Paso Ranch, which will amount to about 120,000 lbs., has been sold to a shipper at 45c., to be delivered at the ranch, at shearing time. Wool growers have fine prospects ahead for sales at good prices.

TALLOW.—Market quiet at 8½@9½c per lb. **SEEDS.**—Flax 3c; Canary, 5@7c., Alfalfa, 10@20c; Mustard—California Brown, 3@6c; Cal. White 3½@4½c per lb.

PROVISIONS.—California Bacon 13½@14c; Oregon, 13½@14c; Eastern do. 13½@14c; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14@14½; Oregon, 15½@16c; California Sugar-cured Hams, 16½@17c; Oregon do. 17@18c; Eastern do. 18@20c; California Smoked Beef, 13½@14c per lb.

BEANS.—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.40@3.60; Navy \$3.50 per 100 lbs.

ONIONS.—Fair to choice, \$1.00@1.50 per 100 lbs.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Cal. Walnuts, 12½@13c; Hickory, 12c; Brazil, 16c; Chili Walnuts, 11c; Italian Chestnuts 35@40c; Eastern Chestnuts, 20c; French Almonds, 22@25c; Princess Almonds, 30@35c; Cocanuts, \$5.00@6.00 per 100.

FRESH MEAT.—Market has remained firm since last report. We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 12@14c per lb. do. 2d quality 10@12c per lb.; do. 3d do. 8@10c.

VEAL.—Quotable at 8@14c.

MUTTON.—12@14c per lb.

LAMB.—None in market.

PORK.—Undressed grain-fed is quotable at 7½@7¾c. dressed, grain-fed, 10½@11c per lb. **POULTRY.**—Live Turkeys, 18@20c per lb.; dressed, 20@22 per lb.; large Hens 10@10½ Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$8.00@9.00; Ducks, tame, \$11.00@12.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME.—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per doz.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is in free demand; it may be quoted at 25@35c; California firkin butter, 20@25c. Pickled, 20@25c. Eastern firkin, 20@25c per lb.

CHEESE.—California, 18@19c; Eastern, 18@19c per lb.

Eggs.—California fresh, 30@32½c per doz.

LARD.—California 12½@13½; Oregon in bbls. and kegs 12½@13c; Eastern in cases 14@14½c; do in tes. 12½@13c per lb.

FRUIT.

Tab. Oranges, M. — @ — Cal. do M \$15 00@20 00
California do .. 10 00@30 00 Bananas, bunch 2 50@3 50
Limes, M. 20 00@25 00 Apples, eating, bx 2 00@2 50
Austin Lemons, M 30 00@35 00 do cooking, bx 7 50@1 25
Sicily do M. 8 00@9 00 Peaches, per box 1 00@2 50

DRIED FRUIT.

Apples, per lb. 6c @ 8c Pitted, do per lb. 20 @ 22
Pears, per lb. 8 @ 10 Raisins, per lb. 10 @ 15
Peaches, per lb. 7 @ 9 Black Figs, per lb. 8 @ 10
Apricots, per lb. 8 @ 10 White, do per lb. 15 @ 20
Plums, per lb. 5 @ 7

VEGETABLES.

Cabbage, per lb. 1½ @ 1¾ Marf. Squash, ton \$12@15 00
Garlic, per lb. ¾ @ 1c Asparagus, per lb. 20 @ 25c
Rhubarb, per lb. 8 @ 10c New Potatoes, per lb. 3½ @ 4c
Green Peas, per lb. 10c Tomatoes, per lb. 10c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Dealers report a fair inquiry for seasonable articles under this head.

BAGS AND BAGGING.—The market is firm for all kinds. Burlap sacks 15c; Flour sacks 10½@11c. for qrs. and 16½@17c. for hlfs. Standard Gunnies are jobbing at 21c@22c; Wool 75@80½.

BOOTS AND SHOES.—An active spring business is expected in this branch of trade.

BUILDING AND FENCING MATERIALS.—The local trade has been good, and a very fair demand for export. The exports embrace 610,000 ft. for Callao and 120,000 ft. for New York. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do dressed \$25; Spruce \$17@18; Redwood \$16@30 for rough and dressed, and 12 for refuse. We quote Laths at \$2.75@3.00; Shingles \$2.50 @2.75. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, \$31 00 to \$32 50
Refuse do do 20 00 to 21 50
Merchantable surfaced and rough clear 28 00 to 30 00
Refuse surfaced and rough 18 00 to 20 00
Merchantable beaded flooring 28 00 to 30 00
Refuse do do 18 00 to 20 00
Merchantable rough 15 00 to 16 00
Refuse do do 11 00 to 12 00
Fancy Pickets 22 50 to 25 00
Rough Pickets 15 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE.—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manilla, 19½; Rio 19½@20. Ground Coffee in cases 30c; Chicory, 12½.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod in bundles at 5c., and in cases at \$8.00; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILES.—Quotable at \$5 50@7.75 for invoice lots ex ship.

RICE.—Sales of China No. 1 at 8c. and No. 2 at 7@7½c per lb; Siam, quotable at 6½@7½c in mats; Carolina Table, 10@11; Hawaiian, 8½@9c per lb.

SUGAR.—We quote Cal. Cube at 14½c; Circle A Crushed, 14½c, and Granulated 14c; Yellow Coffee and Golden C, 12½@13c; Hawaiian 8@11½c as extremes per lb.

SYRUP.—Prices may be given as follows: 82½c in bbls, 85 in hf bbls, and 90c in kegs.

SALT.—California Bay sells at \$5@5¼; Carmen Island, in bulk, \$14; Fine Liverpool, \$25@30 per ton.

SOAP.—The prices for local brands are 5@10c, and Castile, 12@13c per lb.

TEA.—We quote Hyson at 60@75c; Gunpowder and Imperial, 95c@1.05; Young Hyson and Moyune, 90c@1.15; Foo Chow Oolong, 50@90c; Ponchong, 37½@45c; Souehong, 50 @75c; Japan 40@75c per lb.

Rainfall at Sacramento.

[By T. M. LOGAN, M. D., Secretary State Board of Health.]

Jan. 1, 1872. Rainfall for the season to date.....12.42 inches
Jan. 1, 1872. Rainfall for the month.....4.00 inches
Feb., 1872. Rainfall up to 25th.....4.00 inches

Total for the season up to date.....20.50 inches

REMARKS.—February has this season proved a wet month, and the rainfall is now plus the average for the entire season. No rain fell from the 12th to the end of January, except a mere sprinkle on the 23d; so that it would seem the usual interval between the former and the latter rains has this season occurred during the latter half of January, and not in February, as is the most general rule.

Leather Market Report.

[Corrected weekly by Dilliver & Bro., No. 109 Post st.]
SAN FRANCISCO, Thursday, February 29, 1872.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, per lb. 26@29
Santa Cruz Leather, per lb. 26@29

Country Leather, per lb. 25@28

The market is well supplied with French stocks, and prices have a downward tendency. Heavy California skins are firm, with an upward tendency.

Jodot, 8 Kil. per doz \$40 00
Jodot, 11 to 19 Kil. per doz 75 00@95 00

Jodot, second choice, 11 to 15 Kil. per doz 80 00@90 00

Lemoine, 16 to 19 Kil. per doz 85 00@90 00

Levin, 12 and 13 Kil. per doz 85 00@90 00

Cornellian, 16 Kil. per doz 70 00@

Cornellian, 12 to 14 Kil. per doz 60 00@68 00

Ogerau Calf. per doz 84 00@

Simon, 18 Kil. per doz 65 00@

Simon, 20 Kil. per doz 65 00@

Simon, 24 Kil. per doz 72 00@

Robert Calf. 7 and 8 Kil. 35 00@40 00

French Kips, per lb. 1 00@1 30

California Kip, per doz 10 00@80 00

French Sheep, all colors, per doz 15 00

Eastern Calf for Backs, per lb. 1 15@1 25

Sheep Roams for Topping, all colors, per doz. 8 00@13 00

Sheep Roams for Linings, per doz. 5 50@10 50

California Russell Sheep Linings 5 50@5 50

Best Jodot Calf Boot Legs, per pair 5 25

Good French Calf Boot Legs, per pair 4 50@5 00

French Calf Boot Legs, per pair 4 00

Harness Leather, per lb. 30@35

Fair Bridle Leather, per doz 48 00@72 00

Skirting Leather, per lb. 34@37

Welt Leather, per doz. 30 00@50 00

Buff Leather, per foot 17@21

Wax Side Leather, per foot 18@20

San Francisco Retail Market Rates.

THURSDAY NOON, February 29, 1872.		
MISCELLANEOUS.		
Butter, Cal fr. lb	35	@ 45
Pickled, Cal lb	30	@ 35
do Oregon, lb	30	@ 35
Honey, lb	25	@ 30
Cheese, lb	25	@ 30
Eggs, per doz.	18	@ 20
Lard, lb	18	@ 20
Sugar, cr., 6 1/2 lb	100	@ 10
Brown, do, lb	10	@ 13
Beet, do, lb	10	@ 10
Sugar, Map, lb	15	@ 20
Plums, dried, lb	15	@ 20
Prunes, dried, lb	20	@ 30
Wool Sacks, new	67 1/2	@ 70
Second-hand do	67 1/2	@ 70

PRODUCE, ETC.		
Flour, ex, 54 lb	6 75	@ 1
Superfine, do	6 00	@ 1
Corn Meal, 100 lb	3 00	@ 1
Wheat, 100 lbs	2 40	@ 1
Oats, 100 lbs	1 75	@ 1

FRUITS, VEGETABLES, ETC.		
Pine Apples, 1/2 doz	50	@ 90
Bananas, 1/2 doz	40	@ 75
Cal. Walnuts, lb	20	@ 25
Cranberries, lb	20	@ 25
Oranges, 100 lb	30	@ 40
Pears, table, 1/2 doz	20	@ 25
Plums, Cherry, 1/2 doz	20	@ 25
Apples, 100 lb	30	@ 40
Lemons, 100 lb	50	@ 60
Limes, per 100 lb	100	@ 100
Figs, dried, lb	65	@ 75
Asparagus, lb	25	@ 30
Artichokes, lb	25	@ 30
Brussels sprouts, lb	10	@ 12 1/2
Beets, 1/2 doz	20	@ 25
Potatoes, lb	1 1/2	@ 2
Potatoes, sweet, lb	1 1/2	@ 2
Broccoli, 1/2 doz	1 50	@ 2
Carrots, 1/2 doz	1 50	@ 2
Celery, 1/2 doz	1 50	@ 2

POULTRY, GAME, FISH, MEATS, ETC.		
Chickens, apiece	87 1/2	@ 100
Turkeys, lb	25	@ 30
Ducks, wild, lb	50	@ 60
Tame, do, lb	25	@ 30
Teal, lb	25	@ 30
Geese, wild, pair	2 50	@ 3 00
Tame, pair	2 50	@ 3 00
Hens, each	75	@ 1 00
Snipe, lb	1 50	@ 2 00
English, lb	1 50	@ 2 00
Quails, lb	2 25	@ 3 00
Pigeons, dom, lb	2 50	@ 3 00
Wild, do, lb	2 00	@ 2 50
Hares, each	40	@ 50
Rabbits, tame, lb	1 75	@ 2 00
Wild, do, lb	2 00	@ 2 50
Squirrel, lb	25	@ 30
Beef, tend, lb	20	@ 25
Corned, lb	10	@ 12
Smoked, lb	15	@ 20
Pork, rib, etc, lb	12 1/2	@ 15
Chops, do, lb	15	@ 20
Veal, lb	15	@ 20
Butter, lb	15	@ 20
Mutton chops, lb	15	@ 20
Lamb, lb	15	@ 20
Cones, beef, ea	15	@ 20
Bacon, pig, ea	15	@ 20
Tongue, Cal, lb	18	@ 20
Oregon, do	18	@ 20
Hams, Cal, lb	18	@ 20

* Per lb. † Per dozen. ‡ Per gallon.

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PROCES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, February 29, 1872

IRON.		
Scotch and English Pig Iron, lb	55 00	@ 60 00
White Pig, lb	45 00	@ 50 00
Refined Bar, bad assortment, lb	05 00	@ 07 1/2
Refined Bar, good assortment, lb	05 00	@ 06 00
Boiler, No. 1 to 4	05 00	@ 06 00
Plate, No. 5 to 9	07 1/2	@ 08 00
Sheet, No. 10 to 13	05 00	@ 06 00
Sheet, No. 14 to 20	06 00	@ 07 00
Sheet, No. 24 to 27	06 00	@ 07 00
Horse Shoes	7 50	@ 8 00
Nail Rod	10	@ 12
Norway Iron	8	@ 10
Roller Iron	5	@ 6
Other Irons for Blacksmiths, Miners, etc.	5	@ 6
COPPER.		
Sheathing, lb	24	@ 26
Sheathing, Yellow	24	@ 25
Sheathing, Old Yellow	11	@ 11 1/2
Composition Nails	24	@ 25
Composition Bolts	24	@ 25
TIN PLATES.		
Plates, Charcoal, 1x 1/2 box	12 00	@ 10 50
Plates, I C Charcoal	10 00	@ 10 50
Roofing Plates	11 00	@ 12 00
Banca Tin, Slabs, Cal, lb	16	@ 17
Drill	16	@ 17
Flat Bar	17	@ 20
Plough Points	3 75	@ 4 00
Russia (for mould boards)	12 1/2	@ 13 00
QUICKSILVER.		
Lead, Pig, lb	05 1/2	@ 06 1/2
Sheet	08	@ 8 1/2
Pipe	9	@ 10
Bar	08	@ 09
ZINC, Sheets, lb	10	@ 10 1/2
BORAX, Refined	25	@ 30
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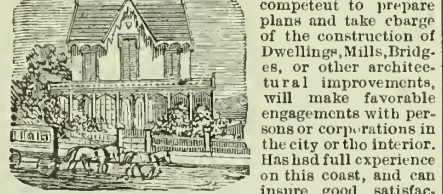
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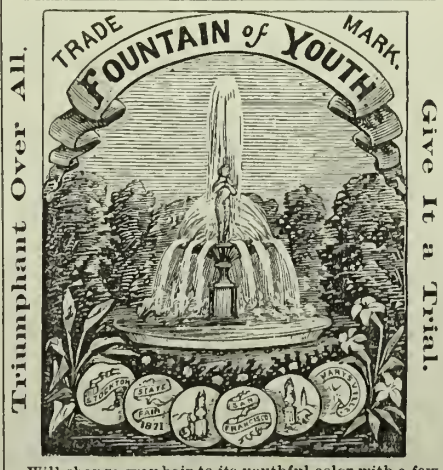
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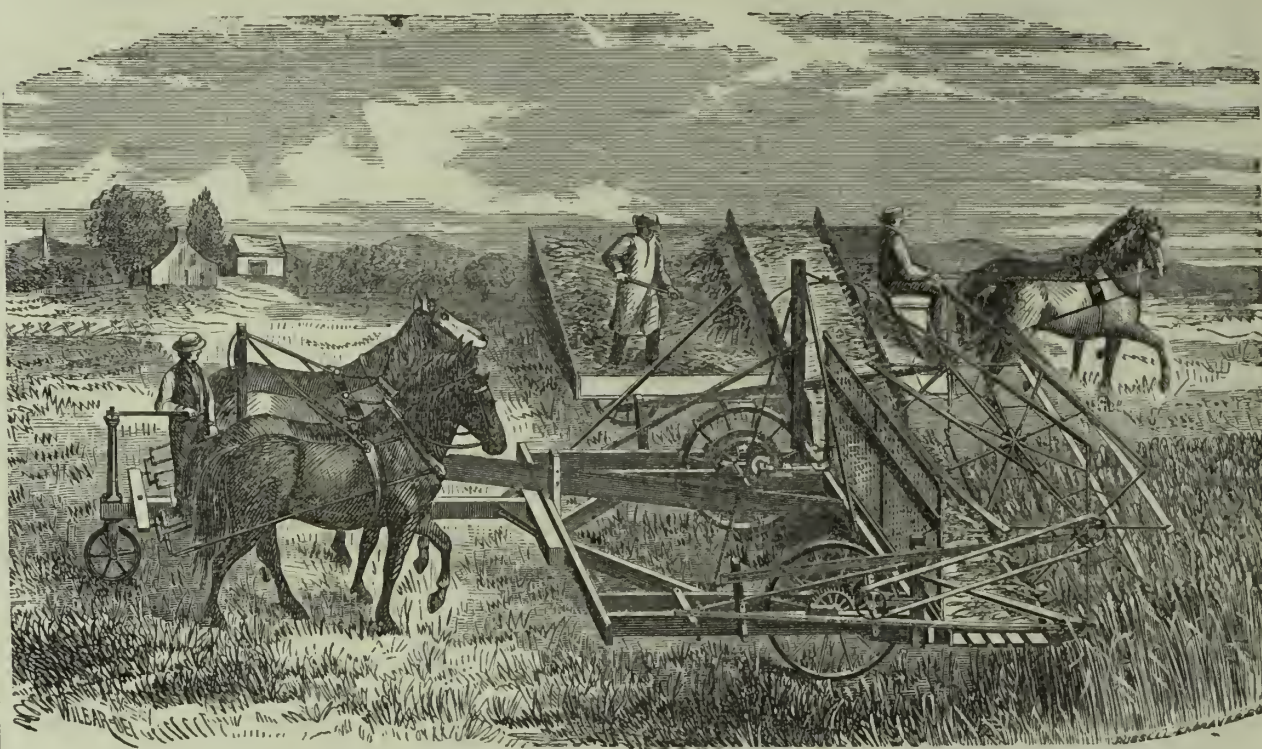
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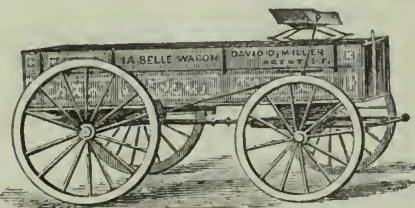
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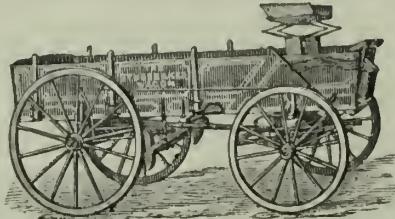
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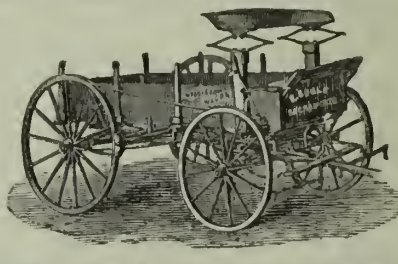
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Alameda County, Cal.

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Has for sale 5,000 Blue Gum, 20,000 Cypress, a choice
variety of Roses and other Shrubs, on
Reasonable Terms.

All orders will receive prompt attention.
L. P. SWEENEY & CO., 409 and 411 Davis street, San
Francisco, are Agents, and will sell stock and receive
orders. 7v3-2m

KING'S NURSERY,

Elm street (between Telegraph Av. and Broadway sts.),
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Evergreen and Deciduous Trees, Shrubs, Roses, etc.,
10,000 Eucalyptus (including Blue Gum).
30,000 Monterey Cypress, Pinus, Insignis, Lawson
Cypress, Acacias in variety, Magnolia, Oleander, Orange
and Lemon Trees, etc., etc., at Lowest Rates.
Orders attended to. Address

M. KING, Nurseryman,
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Flowers! Flowers! Flowers!

DEPOT OF SACRAMENTO NURSERY, K
street, Sacramento, next the International Hotel.
As large and varied a lot of Plants, Shrubs, Ever-
greens, Shade Trees, Bulbs, etc., as can be found in the
State. Camellias and Japonicas of all colors. Hanging-
Baskets, etc. Satisfaction guaranteed. Send orders to
ANTHONY GAFFANESCH,
Sacramento Nursery, Eighteenth and O sts.,
6v3-2m Sacramento.

BLAKE'S PATENT STEAM PUMPS.

WHAT IS SAID BY THOSE WHO USE THEM.

SALEM, Oregon, January 16th, 1872.
Messrs. BERRY & PLACE, San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake
Steam Pump, our company purchased of you, we would say in all sincerity that the pump has exceeded our expectation.
It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work
with ease, does not get out of order, and requires but little or no attention to run it. It is SIMPLE, DURABLE, and PER-
FECT in its construction. We have found it entirely satisfactory and just the pump in every respect needed for our work.
Yours, respectfully, **W. F. BOOTHY, Pres't Salem Water Works.**

PHOENIX MINE, Napa County, January 10th, 1872.
Messrs. BERRY & PLACE, San Francisco—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is
doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump
throws it all out of the main shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute.
It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our
company, as a reference, you are at liberty to do so. Very resp'tly, **GEO. FELLOWS, Supt. Phoenix Quicksilver M. Co.**

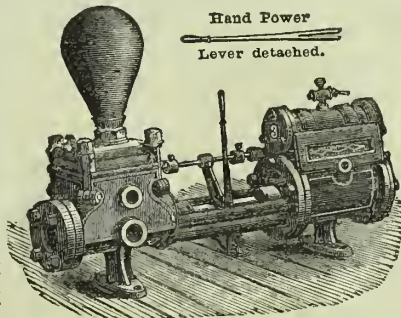
OFFICE STARR MILLS, VALLEJO, Cal., January 13th, 1872.
Messrs. BERRY & PLACE, San Francisco—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased
of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of
Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommenda-
tions. Yours, Etc., **STARR BROS. & CAMPBELL.**

OFFICE S. J. WOOLENCO, SAN JOSE, January 29th, 1872.
Messrs. BERRY & PLACE, San Francisco—Gentlemen: We have used a No. 6 Blake Steam Pump now for about two
years, both as a Tank Pump and as a Fire Pump in case of need; and it has given excellent satisfaction. *It suits us in*
every respect. Very respectfully,
R. F. PECKHAM, Pres't San Jose Woolen Co.

BEALMONT, Cal., February 6th, 1872.
Messrs. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, pur-
chased of Berry & Place, by Mr. Ralston, I will say, that it gives ENTIRE satisfaction, even working as it now is, where no
other Pump could; for it is at present six feet under water, yet it does its work PERFECTLY.
Yours, Etc., **J. E. BUTLER, Supt. Water Works and Engineer at W. C. Ralston's.**

BLAKE'S PATENT STEAM PUMP.

These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold
in the Pacific States now for nearly three years, and we are willing every one in use may be referred to; every Pump will
speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially cal-
culated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows:



It is positive under any pres-
sure. May be run slow or fast
as may be desired. Will dis-
charge more water than any
others of the same dimensions.
Has no leaky joints, the steam
part being cast in one entire
piece. The steam valve is per-
fectly balanced, is cushioned at
each end, and slides with the
greatest facility having no cams,
nor complex rod and arguments
to get out of order. Will start at
any point of the stroke, and will
discharge all the water of con-
densation. The Pump has no
crank or fly-wheel, thereby sav-
ing a considerable item of ex-
pense to the purchaser. Having
no dead points, it therefore needs
no watching, and is consequent-
ly ready to start without using
a starting bar or any hand work
whatever. The Blake Pump is
extensively used on Railroads
and Steamboats, in Hotels;
Mechanics' Institute, San Fran-
cisco, and State Fair at Sacramento, as being the best Steam Pump on exhibition. The
agents have recently imported several of the largest-sized Mining Pumps for water works, and deep mines, and will be
pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam
Pump ever built. For sale by **TREADWELL & CO., Machinery Depot, old stand, corner of Market and Fremont**
streets, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on
them.

Mining and Fire purposes; in
Breweries, Tanneries, Sugar
houses, Factories, Mills, Laun-
dries, and as Boiler Feeders,
wherever steam is employed. In
fact, wherever water or other
liquids are desired to be raised
in large or small quantities, or
against heavy or light pressure,
it is the cheapest and best
Pump that can be used. It is
offered to the public as the
most perfect independent steam
Pump ever invented. Forty
different sizes are made, capa-
ble of throwing from 1,000 to
200,000 gallons an hour, and
adapted to any class of work
that may be required. Every
pump will be warranted to per-
form the work required of it by
the purchaser, or it may be re-
turned and the money will be
cheerfully refunded. The Blake
Pump was awarded a silver
Medal at the last exhibition of

It has no Cams or Rotary Complex Valves. It has stood the test wherever tested.

IT IS SIMPLE, COMPACT, DURABLE, AND POWERFUL.

Manufactured by Geo. F. Blake & Co., Boston, who build and have on hand a larger variety
of Steam Pumps than any other concern in the country, embracing forty different sizes, and
capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to every description of
work required. Send for circular and prices.

The largest stock in the country at the Machinery Warehouse of

TREADWELL & CO.,

Manufacturers' Agents, corner Market and Front Streets, San Francisco.

Machinery Depot for Miners, Millmen, and Engineers' Supplies. Iron and Wood Ma-
chinery; Portable Engines; Mills; Machinists' and Mechanics', Miners' and Farmers' Tools;
Sturtevant's Blowers, Turbine Waterwheels, Etc., Etc. 6v24-cowhp



ALL RIVETED.

HAYWARD'S

COPPER-RIVETED

HORSE COLLARS.

Warranted never to break or give way at the Rim.

Go and look at them at the nearest Harnessmaker's or General
Store, or send for a Circular to

J. C. JOHNSON & CO.,

104 and 106 Front Street,SAN FRANCISCO,



RIM RIVETED.

Dealers in Harness, Saddlery and Leather Goods of Every Description. 6v3-3m

New York Seed Warehouse,

C. L. KELLOGG,

427 Sansome Street, near Clay,

SAN FRANCISCO, CAL.,

Importer and Dealer in

Garden, Field, Fruit, Flower

AND TREE SEEDS,

Ramie Plants.

Pure Alfalfa, Mesquite Grass, Etc.

DUTCH BULBOUS ROOTS.

Imported Direct from the

First Flower Nurseries, in Vozelenzang,

23v2-3m HAARLEM.

Seed! Seed! Seed!

Wheat—Algiers, Australian, Sonora, Club Chile,
Oregon.
Oats—Norway, Oregon, Surprise, Coast, Wild.
Peas—Canada, Windsor, Waco.
Buckwheat—Oregon, Chatfield, Humboldt Co.
Corn—Southern, Eastern.
Flax Seed—California, Oregon.
Potatoes—Early, of all kinds.

IN LOTS TO SUIT, BY
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N. E. Corner Clay and Davis streets, Produce Exchange
Building, San Francisco.

Depot for the Pacific Oil Cake Meal. 19v2-3m

SHAKER GARDEN SEEDS.

Put up by the Shakers at Union Village, Ohio.

Catalogues sent, post paid, to all applicants.
State whether you want WHOLESALE or RETAIL.
Address
8v3-2m **T. J. EMBREE,**
Shaker Box, Lebanon, Ohio.

Seeds, Fruits, Plants.

Our Descriptive Catalogues and Price-lists of GAR-
DEN, FIELD, and FLOWER SEEDS, SMALL FRUITS,
SEED POTATOES, etc., etc., ready in January, and
mailed free to all on application. We know the value
of pure and true Seeds and Plants, as we grow Fruits
and Vegetables for market ourselves. D. H. BROWN
& SONS, Cherry Lawn Farm, New Brunswick, N. J.

SEED WAREHOUSE.



S. W. MOORE & CO.,
IMPORTERS OF
Grass, Vegetable, Clover and Flower
Seeds.

EXPORTERS OF
Evergreen and Conifera Seeds,
Natives of the Pacific Coast.

DEALERS IN ALL KINDS OF
Seeds, Fruit Trees, Evergreen Trees,
Shade Trees, Shrubs and Flowers.

Orders from all parts of the world filled with prompt-
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STORE—No. 420 Sansome street, near Clay street,
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1857. SEEDS. 1872.

15 Years Established.

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8 and 10 J street,SACRAMENTO

Garden, Flower, Field, Fruit, Tree and Shrub,
Grass and Clover Seeds,
Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United
States at 8 cents per pound.
My annual catalogue is ready and will be forwarded
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ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wil-
coxson and others of the most careful and reliable pro-
ducers.
Kentucky Blue Grass, Red Top Timothy, Red and
White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and
other of the best tested varieties. An Eastern Agricul-
turalist offers \$1,000 for a potato superior to the Excel-
sior in good qualities.

W. R. STRONG,
8 and 10 J Street, Sacramento.

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A. H. TODD,
COMMISSION MERCHANT.
DEALER IN

All Kinds of Grain and Produce.

Has on hand large stocks of Wheat, Bar-
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Potatoes, etc.
SEED GRAINS, of all kinds, a specialty.
WHEAT—Choice Seed—Bay Coast, Aus-
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BALD BARLEY—Superior Seed for Hog Feed or Hay.
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In daily receipt of consignments of Hay, Straw,
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SHADE TREES! SHADE TREES!

LOCUST, LOMBARDY, POPLAR, CIRCASSIAN
and States Mulberry, California, and States Black
Walnut, Wild Cherry, Weeping Willow, etc., grow-
ing in my Nursery, 3 1/2 miles below Sacramento (near Sut-
terville), and which I now offer to Planters and the Trade
at prices to suit the times. Trees delivered to cars or
steamers, or to any part of the city, without additional
charge. Orders by mail or express promptly attended to.
2v3-3m **J. S. HARBISON, Sacramento.**

Grape Vines and English Walnuts.

I have a large lot of one year old, well rooted, White
Muscat of Alexandria Grape Vines, which I will sell at
\$6 per 100 or \$50 per 1,000. Also, strong-rooted, one-
year old English Walnuts, at \$12 per 100, or \$100 per
1,000; packed and delivered at the R. R. Depot. Orders
may be left with A. Lusk & Co., San Francisco, or sent
by mail to the subscriber, San Jose; P. O. Box No. 494.
fe3-1m **G. W. MCGREW.**

1871. Farmers, Look to Your Interests. 1871

GRASS, CLOVER AND FIELD SEEDS
On hand, in lots to suit, at lowest market rates. Genuine
Alfalfa California grown, Red and White Clover, Timothy
Seed (Oregon and Eastern grown), Genuine Norway Oats.
Also, choice varieties Seed Potatoes, Peas, Beans, Cal-
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No. 25 Front street, Sacramento. P. O. Box, No. 519.
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10,000 Acres of Land,

Situated upon
GRAND ISLAND,
Twenty miles south of Sacramento,
FOR LEASE OR SHARES FOR ONE, TWO OR THREE
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The construction of the levee is now going ahead
This land CANNOT BE EXCELLED IN PRODUCTIONS.
Shipments can be made from any portion of
Island by all classes of vessels.

Apply to
401 California street, San Francisco.

Or to
16v2-1f **WM. GWYNN,**
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as it were, is required on the Pacific Coast, on account of its peculiar seasons, soil, climate and topography. The new discoveries, ideas, and useful hints evolved in its rapid progress, are to be observed with interest, and read, as reported in the PACIFIC RURAL, with profit by practical and progressive agriculturists everywhere. Sample copies of the Press, post paid, 10 cts. Subscription, \$4 a year.

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No. 338 Montgomery St., San Francisco, Cal. Nov., 1871

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Established in 1860, this weekly has steadily advanced in size, ability and interest. Its chief editors and publishers have had over fifteen years successful experience in conducting this and other journals in California.

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Have doubtless been saved to the miners of the Pacific Coast by reading this journal, each issue of which contains some two pages of MINING SUMMARY from the most important districts in the U. S.; from one to two pages concerning NEW INCORPORATIONS, SHARE MARKET, MINING CORRESPONDENCE, COMMUNICATIONS, etc., and from two to three pages of EDITORIALS (with illustrations) of NEW MACHINERY, NEW DISCOVERIES, PROCESSES, and operations in MINING, MILLING, ROASTING OF ORES, ASSAYING, etc.

One feature of our journal consists in presenting in each issue a POPULAR VARIETY of highly interesting matter, useful and instructive for all intelligent readers, systematically arranged in departments under headings entitled Mechanical Progress; Scientific Progress; Mechanical Hints; Home Industry; New Discoveries; Good Health; Domestic Economy, etc., rendering its reading pleasant and profitable at the OFFICE, SHOP AND FIRESIDE.

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Although about two hundred different styles of fences have been invented and patented in the United States within the past ten years, yet this Fence, for GENERAL FARM USE, stands at the head of the list. This is a Virginia invention, and the actual cost of the Fence complete in that State is less than fifty cents per rod. Three men can put up six hundred yards per day. Price of territory, and circular with full description of fence, sent on application.

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All Lots examined before naming price to Purchasers.

Each Consignment offered for sale on its merit.

Having our own wool rooms, careful attention is given to the weighing by one of the firm.

The best Wool Sacks and Twine.

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Fine Imported Poultry,

CONSISTING OF

Dark Brahmas,

LIGHT

Brahmas,

BUFF COCHIN,

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Houdans,



Guaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal. Address W. FORD THOMAS, Custom House, San Francisco.

EGGS FOR HATCHING,

From My Finest Pure Bred and Imported Fowls.



PER DOZEN.
Light Brahmas, "Don Juan" and "Haidée".....\$12.00
Light Brahmas, bred from my Imported Stock..... 6.00
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All Eggs ordered will be packed with great care, and Warranted True to Name, and Free h.
Cash Orders filled in rotation. Address S. B. PIKE, Care Fireman's Fund Ins. Co., 1424-1m16p N. W. cor. Capp and 23d sts., S. F.

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I have a lot of Choice Hop Roots for sale at Lowest Rates. The suckers, instead of being cut off from the stock, were covered with earth, thus promoting the growth of the "laterals," which are used for planting. I can also furnish healthy Lawton Blackberry Plants at \$8 per thousand. Orders may be addressed through DEWEY & CO., of the "Rural Press;" DRAKE & EMERSON, 521 Sansons st., San Francisco; W. R. STROM, 8 and 10 J st., Sacramento; or direct to me, 25v2-3m16p CALVERT T. BIRD, San Jose, Cal.

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

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GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry, Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

GEO. B. BAYLEY,

Importer and Breeder of

CHOICE POULTRY.

P. O. Box 659, San Francisco.



TREES FOR SILK!

Multicaulis,

1 year old, \$20 per Thousand.

Do. 2, 3 and 4 years, \$25, \$35 and \$40.

ALBA AND MORETTO, 2, 3 and 4 years, \$40, \$50, \$30

CUTTINGS of all kinds \$2.50 per thousand.

TREES FOR SHADE!

Finest and Cheapest in the State.

White and Black Mulberry

From 1 1/2 to 3 inches diameter, and 15 to 20 feet high—from \$25 to \$30 a hundred, or 30 to 50 cents each.

FRUITING MULBERRY!

From 50 cents to \$1.50 each.

Silkworm Eggs and Silk Manual. Liberal discount to the trade.

I. N. HOAG,

Sacramento, Cal.

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N. GILMORE,

Importer and Breeder of

Angora or Cashmere

GOATS

—OF—

PURE BLOOD

—AND—

ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

N. GILMORE,

El Dorado, El Dorado county, California.

5v3-1f

MCDUGALL & MARQUIS,

Architects,

No. 328 Montgomery Street,

SAN FRANCISCO, CAL.

1v3 3m

NORWAY Genuine Norway Oats, raised on hill land, by one of the proprietors of this journal, can be had at this office.

EGGS FOR HATCHING

FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums

At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
DARK BRAHMAS, Imported from England and Ireland;
HOUDANS, direct from France;
LA FLECHE, direct from France;
SILVER SPANGLED HAMBURGERS, (Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
WHITE COCHINS,
BUFF COCHINS,
DUCK WINGED BANTAMS,
GOLDEN SEABRIGHT BANTAMS,
JAPANESE BANTAMS,
HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager,

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OFFICE—No. 11 Leidesdorff street.

YARDS—Cor. Laguna and Washington streets.

4v3-3m-16p

THE

PEOPLE'S PRACTICAL POULTRY BOOK.

A Work of 224 pages on the

Breeds, Breeding, Rearing and General Management of Poultry.

By WM. M. LEWIS, New York, 1871; with over One Hundred Engravings. Sold at this office for \$1.75, or sent postage paid for \$2.00.



Los Angeles Lemons.

We have known for years that Los Angeles County produces as fine oranges as we usually see in our markets; but we never saw a lemon, from there or anywhere else, equal to the one rolled in upon us a day or two since by Mr. C. W. Cook, who, though a resident of Diamond, Meigher Co., Montana, has just returned from his first visit to Los Angeles. He brings with him a lemon grown by the proprietor of the Anaheim Hotel, that measures 15 inches in longitudinal circumference and 11½ inches transverse circumference. It was one of many hundred on the same tree, not all as large as this however, but still the number of lemons as well as oranges grown upon a single tree in one season is enormous.

Our informant counted over three thousand oranges on one tree, and then stopped counting; true it was a ten year old tree, but a great many much younger trees, had over a thousand each. This fact alone would set at rest the matter of the immense profit derived from orange and lemon culture. Curious to know how many trees were planted on an acre, of the different varieties of fruits, he found them to be nearly as follows: grapevines 1,000; walnut 40; oranges or lemons 60.

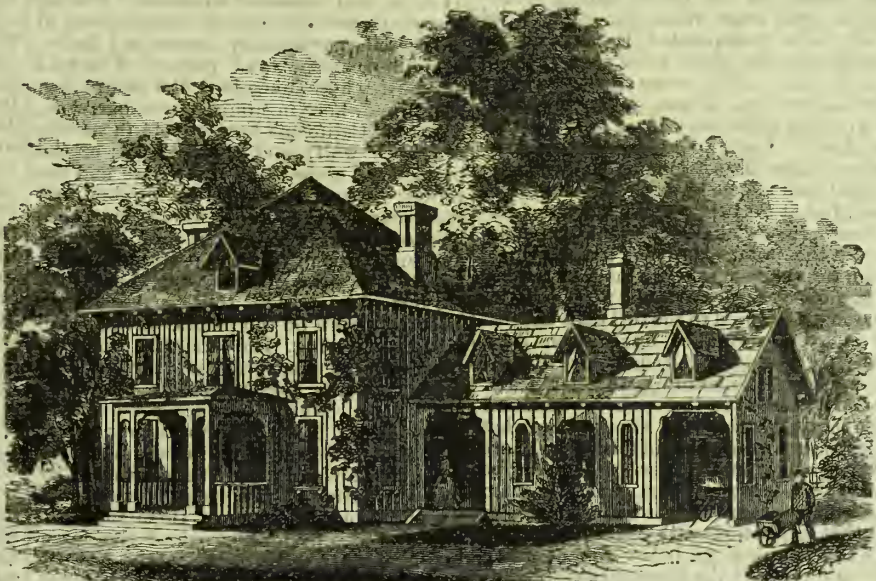
From 13 acres of trees, the rows alternating with orange and apple trees in equal numbers, over \$22,000 of fruit, orange and apple, was sold in a single season. Mr. Cook represented the country as perfectly charming; the animals as rolling fat, and the green grass in many places actually up to the wagon axles as you travel over it. He speaks of the great draw back to the settlement of the country more rapidly than now, as being the fact that much of it is held by large proprietors who hold their lands at too high prices.

On the return of Mr. C. to Montana, he takes with him from the coast country a band of 2,400 sheep, for the mountain pastures that surround his alpine home; which he assures us is not surpassed by any other country for sheep growing he has ever seen, not even the beautiful Los Angeles country he has just visited. He drives his flock by way of Walla Walla and the great national road leading eastwardly to fort Benton, known as the Mullen road. He represents Montana as abounding in immense stock ranges, and that owing to the little snow falling there, an abundance of food both winter and summer is procurable by all manner of stock, but considers it eminently superior for sheep. Mr. C. is one of our earliest subscribers to the Rural Press and we have the promise of hearing from him and his Montana stock enterprise at an early day.

MONTEREY COUNTY.—A correspondent from San Antonio informs us that since the rains set in, so fine a season both for stock raising, and general agriculture has been unknown in this district since its occupation by Americans. Excepting for the last four days, (it is fine at the time of writing, the 29th of February), both nights and days have been uncommonly mild, the lambing having so far passed very successfully. The herbage (it would be wrong to call it grass) is the most abundant ever remembered, and a larger amount of land is under the plow than has previously been seen in this district, and more would have been cultivated had a proper and equitable trespass law been passed by the Legislature. Notwithstanding the abundance of grazing now seen all round, it will be two months hence before stock will be fully recovered from the famine occasioned by last year's drouth.

Design For a Complete Farm House.

When we speak of a complete farm house, our friends in the country can fancy to themselves a dwelling that shall contain every convenience necessary for the carrying on of the household portion of the farm labor, at least such is the idea we have of it, and in the composition of the present design we have endeav-



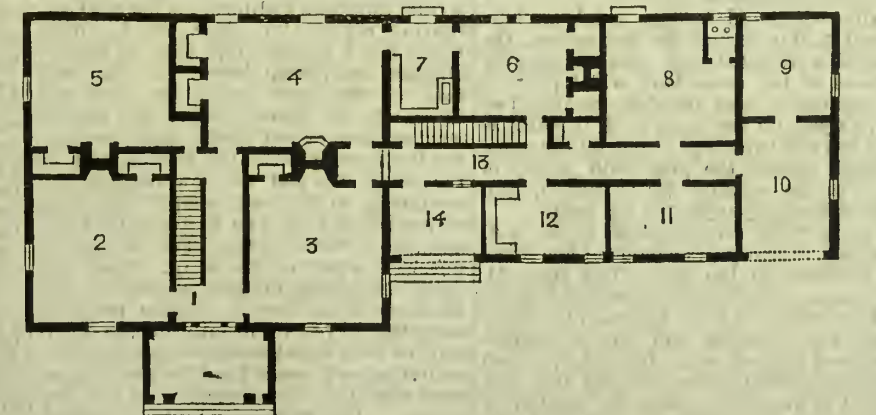
DESIGN FOR A FARM HOUSE.

ored to supply those conveniences. There is nothing at all showy about the house, either in design or plan. It is a plain, substantial farm house, nearly square, with a large L on one side, our aim being to insure convenience even

besides bathing room, dressing rooms and closets. The attics may be left unfinished.

Construction.

This house may be built of wood and covered, in the common manner, with clapboards.



GROUND PLAN.

at the expense of ornament; though we think after the house has become two or three years old and brightly flowering vines begin to cover its sides, and trees throw their shadows upon it, that it will have a cosy, comfortable, home-like appearance, in pleasant contrast with the shingle palaces of late so fashionable among us.

Our plan comprises the following accommodations: No. 1, hall, 7 feet 8 inches by 19 feet, opening into No. 2, parlor, 15 feet by 16. No. 5 is a bedroom, 15 feet square; No. 3 a living room, also 15 by 16 feet, opening into back entry—No. 13, and across it into the kitchen—No. 4, 15 feet by 20. This kitchen contains two large closets and connects with a pantry, No. 7, which measures 7 feet by 10, and is fitted up with a sink and shelves. The next room, inside, is the back kitchen and wash-room, which contains two closets, a large oven and boiler, and measures 16 feet by 12. It opens

into the back entry, through which we pass to the wood room—No. 8, 14 feet by 15. No. 10 is the carriage shed, and No. 9, workshop. The back entry is 4 feet wide and contains stairs to the chambers and cellar. On the front, doors open into the dairy—No. 11, 7 feet by 14; the store room—No. 12, 7 feet by 13, and upon the sheltered porch, No. 14.

The second floor contains eight chambers,

California Garden Seeds.

We have been making particular inquiry on the subject of garden seeds, with a view of ascertaining what proportion of the total quantity sold by the seedsmen of San Francisco were the growth of California; and we find that only about one-eighth of their entire annual sales, are of California grown seeds; none putting the quantity more than this, and some even less.

Now, for a country famous for its production of the finer fruits in their highest perfection, and vegetables unsurpassed, it is almost humiliating to know that we cannot or do not raise our own seeds.

It is not because they cannot be grown in our soil and climate, for the experience of twenty years has demonstrated that no where can better seed be grown than here. D. L. Perkins, of Sherman Island, both there and in Oakland, raised the best seed ever exhibited at our State and District Fairs; and his seeds took the first medal awarded at the late grand Exposition at Paris for American garden seeds, and this over all Eastern competitors.

For some cause, perhaps not easily explained, there has been for three years, great difficulty in growing good onion seed over a large part of the New England States. It nearly all "blasted," or failed to fill, and of course failed to vegetate when planted. At the time of this failure there, we were large purchasers of California grown onion seed, for use in those States, and in no instance were they found defective or wanting in vitality; on the contrary they seemed to be better than their best seed had been in their most favorable years, fewer of the seeds failing, and producing a superior growth on maturity.

We intend to pursue this subject from time to time, and from year to year, until California shall not only raise enough for home use, but for the immense demand that will spring up to fill the orders from Japan, China, and the islands of the Pacific, now waking up from the lethargy of centuries, from the touch of the wand of a young America.

SUGGESTIONS FOR LEVEE CONSTRUCTORS.—A correspondent, Mr. Wm. Taylor, suggests, as a means of preventing the drying and cracking of the levees, by which the water often finds its way through, that about two feet in width of sand should be filled into the middle of the levees from bottom to top. Such a mode of construction would make them absolutely water tight. Then, to prevent the surface from cracking, it should be covered with six or seven inches of sand as soon as the work has become hard enough to bear the weight of a horse and cart. The sand will act as a mulch to exclude the coöperative action of the sun. A sand or soil suitable for such a purpose can generally be found about 2½ feet below the surface. This remedy only calls for a little more patience and labor, and it is thought that it will be found much more effective and practical, than using the levee as a thoroughfare, for driving stock upon it, as has been suggested.

ARTESIAN WELLS IN LOS ANGELES COUNTY.—We learn from an article in the Star that there are now about 100 wells in that county, but that half of them are running. One of the best is only 27 feet deep; two are 29 and one 39 feet. These are the shallowest artesian wells in the State. These four shallow wells—a fifth of 92 feet, and a sixth of 135 feet deep—are situated within a radius of four miles, and, together throw up 1,000,000 gallons daily. The average bore of these wells is seven inches.

Riverside.

[Written for the Press.]

EDITORS PRESS:—In a small settlement of only about 175 persons, and not yet much more than twelve months old, it must be gratifying to you to number amongst them no less than sixteen subscribers, wherefore I have thought it may be both useful and acceptable to your readers elsewhere as well as here, and that you would not consider me by so doing, intrusive, if I placed at your option for publication a general—as well as in some respects, a particular—account of

Riverside.

In San Bernardino Co., (picked up by me from reliable sources by enquiries on the spot since my arrival here,) to which settlement I have for some time been gradually gravitating, and which I finally reached, about the middle of December last, taking my starting point from Washington in the fall of 1870. This settlement of Riverside, so named on account of its proximity to the Santa Ana, the principal river in Southern California, is situated on the old Mexican ranch called Iurecpa, in latitude 34 north, and longitude 117 west of Greenwich, being 55 miles southeast of Los Angeles. Its history is as follows:

In May, 1870, three of the present proprietors of the colony lands left the eastern part of the United States for California, in search of a spot suitable for a colony, having in view, first, a healthy location; secondly, soil suitable for semi-tropical fruit culture and agriculture generally; thirdly, to establish a high grade of education for the children of their families; fourthly, a beautiful location. Fortunately they arrived in the midst of one of those severe periodical drouths of California, and where thus enabled at once to discover the real needs (absolute, indispensable requisites) of such a colony, whereby was shown the positive necessity of an abundance of water for irrigating purposes in all seasons.

After spending the summer months in examining the lands beyond the Coast Range of mountains, or between it and the ocean, they became aware they had not succeeded in finding the spot which they desired; one reason was, that they were unable to find water sufficient for irrigating as large a tract of land as they desired; another was, that the chill damp air of the ocean, during the summer months, was not suitable for invalids, or for the culture of semi-tropical fruits, or indeed, such as favor high health in those who were not invalids. They therefore next examined the great valley between the two ranges of mountains—the Sierra Nevada and the Coast Range—and from this examination they selected the present site of the colony on the Santa Ana river. Here they found an abundance of good land, and a full supply of water for irrigation, as well as for water power, on high table land from 40 to 100 feet above the river, and also found that they could bring the water from the Santa Ana river, some ten miles above, by irrigating canals ten and twelve miles long. Another consideration was, that the trade winds of the Pacific, every day in summer coming through the cañon in the Coast Range made by the passage of the Santa Ana river, became divested of their chilliness and moisture, and so afforded a very dry, healthful, invigorating breeze that materially tempered the heat of the valley.

After making the purchase of these lands, work on the irrigating canal was commenced in October, 1870, and was so far completed in July, 1871, as to be able to furnish all the water required for domestic and irrigating purposes by the settlers then, and now on the land, at a cost of between fifty and sixty thousand dollars independent of the purchase money for the land. About twenty families from the East removed to this spot by the middle of January, 1871, which number is now increased to about sixty families. There is here no prevailing sickness of any kind; scarcely any business for physicians, although nearly all the population came here with various chronic difficulties. Affections of the lungs, (including asthma,) liver complaints, rheumatism, neuralgia, and, indeed, all varieties of chronic ailments, steadily improve here, and yield without the aid of medicines.

Southern California may be denominated the sanitarium for the invalids particularly for those suffering from all chronic affections. For ten months out of the twelve, the atmosphere is uniformly dry and bracing—pure dry air—and therefore the patient is not subject to those sudden changes that play such havoc in the east,

but has time to recuperate and gain strength to resist the changes when they do come. There is no spot on this Continent, east of the Rocky mountains, that compares with it. From March to November there is scarcely a sudden change of atmosphere which is all the time pure and bracing.

During the summer months, although the thermometer indicates a high degree of temperature, the atmosphere is never sultry, in consequence of the trade winds from the Pacific, sweeping over the valleys. The evenings and nights are deliciously cool, affording ample and refreshing sleep for the restoration of the physical and mental powers. On the table lands there are no mosquitoes, or any of the other tormenting insects that prove so annoying elsewhere. Sleep is so refreshing and recuperating that the magnetism is entirely restored, and you feel fit and glad for work, free from all lassitude and its accompanying attendants.

The soils of the valleys of Southern California are characterised by great strength and richness, and with sufficient water for irrigation are very productive, two crops a year being the invariable product on the same. The bench or table lands are seldom troubled by frosts; the wet bottom lands are more frosty, and therefore not fitted for the culture of semi tropical fruits. During the past month the population have all been busily engaged putting in fall crops, such as wheat and barley; and are now employed in transplanting semi-tropical fruit trees, vines, etc., enough of which were transplanted last spring to demonstrate that they grow vigorously in this climate, while some three or four thousand orange, lemon, and lime trees are growing vigorously from seed planted last April. Until about the last week in January, since the settlement of the colony, no frost had affected the tenderest vine or plant, but at that time—which is considered very remarkable here—the frost destroyed the potato and the tomato vines. Green peas, however, remained in bloom in the open garden ground; while some previously matured to the full pod supplied the tables of several of our citizens with fresh green peas for the Christmas dinner. Garden flowers, including the geranium, are in full bloom in the open ground, and give the appearance of summer to what little winter we may be said to have had here. Both vegetable and flower gardens can be cultivated to maturity here, generally, I am told, all the year round; it being a singular fact that vegetation will continue to grow here at a temperature below that at which it should grow in the Eastern States. The mean temperature of Riverside since October 16th, 1870, to January 1st, 1872, is as follows, taken at 7 A. M., 12 M., and 7 P. M.; viz: 1870, October, 67.2; November, 64; December, 51.2; 1871, January, 75.8; February, 55.2; March, 62.1; April, 63.2; May, 68.1; June, 75.2; July, 80; August, 80.1; September, 77.2; October, 71.1; November, 62.2; December, 59.

After wheat and barley, which are harvested in May during the dry season, the ground is irrigated, and corn can then be planted on the same land, which perfects in September and October, making two crops a year on the same land. It being as easy to raise two crops as one on the same ground during the year with plenty of water in the summer for irrigation, and that without any injury to the land.

Lands with semi-tropical fruits well growing, in five years command five hundred dollars to the acre. The Hon. D. B. Wilson, State Senator from this district, and proprietor of Lake Vineyard ten miles from Los Angeles, and whose oranges command the best price in market, visited Riverside about three months ago, and gave it as his opinion that, for quality of land in a body, quality of soil, and climate suitable for raising semi-tropical fruits, and conveniences for irrigation, this colony possesses the finest in all Southern California.

A very important branch of business here will be the raising of grapes for the manufacture of both raisins and wine. Wine has already been manufactured in large quantities on the west side of the river, on the estate of the late Mr. Rubideau, from which estate part of the colony lands were purchased. It is now no longer an experiment, but an actual demonstration from abundant experience, that the grapes grown on the red bench lands between the Sierras and the Coast Range, at an elevation of about one thousand feet above the ocean, produce the sweetest and best grapes for both wine and raisins; instance in proof of this, the Cocumungo and Carpenter vineyards, which have the highest reputation for wine of any made in the State, as well as Mr. Dalton's vineyard for the manufacture of raisins. At the

same time we would remark that, these grapes are not so much esteemed for table use as those which are grown nearer the ocean, on account of the absence in them of that slight tartness which the ocean grapes possess.

Another important product for the cultivation of which the colony are making ample preparations, is the Turkey Poppy, it having been proved by the experience of Dr. Delmont, in Lake Co., for the last three years, that the opium made from the poppy raised in California from seed brought from Turkey, contains three per cent, more morphine than that raised in Turkey itself, owing to its being perfected in the dry season so peculiar to California when removed from the ocean fogs. Important in this connection is the fact that, the water in the irrigating canals on the company's lands is far removed from all danger of floods, by being from 100 to 150 feet above the river, by which is also afforded an abundant supply of water power both safe and economical. There is also here an ample supply of fire-wood, and an abundant supply of building-stone, including an excellent quality of marble.

For six months, during the dry season of the year, the prevailing winds are west-southwest, being the regular trade winds of the Pacific, which, passing through the cañon of the Santa Ana river in the Coast Range, spread over this valley divested in its passage of the chills and fogs of the ocean. This breeze commences at about 11 A. M., and ceases at sundown. During the winter months there is an abundance of wild game, particularly geese and ducks; also quail, curlew, and plover. The wild animals, whose home is in the mountains, are found here in limited number, viz., antelope, California lion, coyote (a species of prairie wolf), and the wild cat; on the plains is an abundance of the hare and the rabbit; also the badger, the gopher, and the ground squirrel. Bears formerly inhabited all this region, but they have disappeared excepting in the Sierra range, twenty-five miles distant, and there they are but seldom seen. Rattlesnakes are occasionally seen on the plains, but they are fast disappearing. The tarantula, the scorpion, and the centipede, are occasionally found, but are becoming less numerous every year. Mosquitoes are seldom seen or felt here. There are no roving tribes of Indians in Southern California, but there are a few Catholic Indians, converted by the early missionaries from Mexico, who are peaceable and many of them industrious, and who perform much of the labor here. Scattered throughout the valleys are also small neighborhoods of Mexicans who were found here when California was ceded to the United States.

About 250,000 sheep are estimated to be wandering over the valleys of San Bernardino county, with many thousand head of cattle and wild horses; the cattle affording excellent beef, that is sold here at 7 to 10 cents per pound for good quality. As a rule, Southern California is not a wheat-bearing region, but there are localities where it is a certain crop, with an unusually fine and plump berry. On the east side of the Santa Ana river, from the Sierras to the Coast Range, are located what are termed red bench lands, occupying the space between the bottom lands of the Santa Ana and the low range of the mountains on the east, comprising a strip of level land from two to five miles wide, and about twenty long. The company's purchase is part of this strip. Since the early settlement of this region by the Mexicans it has been a common practice, excepting in years of drouth, for the Mexicans to raise wheat for home consumption; no irrigation is needed and the grain ripens soon after the commencement of the dry season. The rust in wheat is seldom known on these bench lands, in consequence of the absence of fogs that usually prevail between the Coast Range and the ocean, and which there make the raising of wheat a very uncertain venture. It is not uncommon for this bench land to produce 45 to 60 bushels to the acre; a fair average yield may be put down at 30 bushels per acre. Barley and corn grow luxuriantly on these lands, barley yielding from 60 to 90 bushels per acre, and corn from 60 to 120 bushels; indeed, the land of Southern California may be said to be the natural soil for the corn crop, much more so than any other part of California.

But the great value of these red bench lands is the adaptation of its soil for the cultivation of grapes and semi-tropical fruits; hence, wherever water can be introduced for artificial irrigation, these lands—on account of their peculiar adaptation to the grape and semi-tropical fruit culture—become the most valuable known

in California, from the fact, that there is only a limited quantity of such lands capable of artificial irrigation. In the vicinity of Los Angeles the culture of the orange has been quite extensive, with a deservedly world-wide reputation, its fruit commanding the highest price in the market. Most of these oranges are raised on the bottoms of the Los Angeles river, where they can be irrigated very readily. Some 14 years ago the Hon. B. D. Wilson planted an orange orchard and vineyard on the red bench lands near the base of the Sierras; these trees have been in bearing about five years, and public opinion gives the oranges grown here a decided preference, both as to quality and size, over those raised at Los Angeles, as is shown by their bringing a dollar per 100 more than the latter. Some years later, the Hon. Anson Van Seyven, of Old San Bernardino, planted his orange orchard on the same red bench lands as those of Riverside and its vicinity, about ten miles above, on the same side of the river. This orchard has been in bearing for three seasons, the fruit of which in quality is fully equal to that of Mr. Wilson's, but larger in size. Last fall a single cluster of twelve of these oranges was brought to Riverside for exhibition, which weighed 11 pounds 6 ounces. The oranges there grown are of a rich golden color, perfectly free from the dark rusty spots so common in the Los Angeles oranges, and which is believed to be in consequence of the absence of fogs that prevail so extensively in Los Angeles.

The population of Riverside Colony proper, is at present about 175. About one-half of this number came here during the winter and spring of 1870-71, expecting the completion of irrigating ditches in March; but in consequence of the severe drouth of last winter the work was prolonged until July, thus preventing the settlers getting in crops for the season of 1871; this defect is now, however, fully remedied by abundance of water through the ditches. In consequence of this delay the company has foreborne taking any extra or outside means to invite immigration here until such time as the water could be made available by the settlers generally. Quite a large accession to the population has been made since September, and it is still increasing.

There is here the best school house in the county, which is free for the use of the citizens of all opinions upon religious, political or social subjects; and on alternate Sundays, both mornings and evenings, it is used respectively by what are known as the orthodox sects, under the ministry of the Rev. Mr. Atherton, a Congregationalist, and by what are called the Liberal Christians, or Free Thinkers, who have come out from—more or less—all the sects.

EDWARD BRODIE.

Riverside, Feb. 9, 1872.

Planting Whole and Cut Potatoes.

Dr. Hexamer, of New York, in a result of an experiment of planting the potato in seventeen different ways, found that the best results were given from one large potato, whole, in each hill, the next best from two large half potatoes cut lengthwise; next the seed end of a large potato; next from medium sized potato planted whole; the smallest from small half potatoes. A medium potato he plants whole; large ones cut in half and the largest in four pieces, each lengthwise, always taking care to select his best and soundest potatoes for seed.

J. A. Warder, of Ohio, in an experiment with Harrison's, found that large seed cut in halves gives the most saleable potatoes. He says:—"This experiment, in connection with one made last year, would induce me to cut, good, saleable-sized potatoes for seed in preference to planting them whole; and in years of scarcity to use small potatoes, with care not to plant them too closely together."

Prof. Daniels, of the Wisconsin Agricultural College, in an experiment found that cut seed gave more from the same weight of seed, except where small potatoes were used, than whole ones did. The whole potatoes produced the most vigorous plants; those cut the least.

The National Rubber Works at Bristol, Rhode Island, have finished a rubber belt, 175 feet long, four feet wide and one-half inch thick, which weighs 2,000 pounds.

ONE REASON for the popularity of the Rural Press is the fact that it possesses in its columns some attractions for each member of every intelligent family—old and young.

He who buys too many superfluities may be obliged to sell his necessities.

SCIENTIFIC PROGRESS.

Spiral Leyden Jar.

According to a writer in the *Philosophical Magazine*, a spiral Leyden jar may be constructed as follows: "A strip of tinfoil, four feet long, and eight inches wide, is placed in the centre of a strip of vulcanized caoutchouc four feet long, and one foot wide, in such a way that at one end (say the right) there is a margin of four inches of caoutchouc, and at the other (the left) four inches of tinfoil. A second piece of caoutchouc, of the same dimensions as the first, is placed over the tinfoil, the ends coinciding with the first piece of caoutchouc. A second piece of tinfoil, of the same width as the first, but four inches shorter, is then laid on the second caoutchouc, with its right-hand end over the end of the first foil, its left end of course falling four inches short. A brass wire with a knob is laid across the end of the upper foil. The whole is then rolled up from the right end, and bound. What was the lower of the two foils projects between the two layers of caoutchouc, and may be prolonged around the circumference of the roll. It forms the outer coating, or earth surface. What was the upper coating of foil now corresponds to the inner coating of the ordinary jar, and is entirely covered, excepting when it is prolonged by the wire and knob at the centre of the roll. If the sheet caoutchouc be one-eighth of an inch in thickness, a jar of very great electrical capacity is obtained."

AN ASTRONOMICAL PROBLEM.—One of the greatest unsolved problems in astronomy in our era is the combined system of movements of the stars of our own sidereal system. It is worthy of the application of the highest talents and of the largest learning, and it seems to invite especially the devotion of young men who may make it their life-long labor. There are at least four aids and encouragements to undertake the work; first, the form of our sidereal system, which is a ring with an interior disk-like stratum, and both the ring and the stratum lie in the same plane; secondly, our position in the system; which, as already shown, is near the center; thirdly, the origin of the system and its motions, according to the nebular theory; fourthly, the present calculable influence of the stars on one another, such particularly whose distances are known.

The aid we may receive in the solution of this great problem, from our position near the center of our sidereal system, may be estimated by our relation to our solar system. How much more simple would the motions of the planets appear from a central point, like the sun, than from a half-way position, as on our earth! Knowing, therefore, our stand point in our sidereal system, we may put together the motions of the fixed stars with the more confidence and hope of final success in unraveling the great mystery of their intricate dance.—*Ennis*.

ESTIMATION OF GRAPHITE.—F. Stolba communicates the fact that it is possible to determine, accurately enough for practical purposes, the percentage of carbon in commercial graphite by simple combustion in the air. He employs for this purpose a simple Bunsen burner, and announces that the burning of a few grammes of graphite is by no means so difficult as is generally supposed. The author places a weighed portion of the finely powdered and dried material in a platinum crucible, having a punctured cover. The crucible is placed over the flame in an inclined position, and the cover is placed so as to leave one-fourth of the same open. By this arrangement, by which a good draft is secured within and occasional stirring of the material, a few hours completes the operation, leaving the ash in an excellent condition for further analysis.

MARBLEIZED GLASS FOR BUILDINGS.—It is not unlikely that a new building material will soon be introduced to the public, that promise to work quite a revolution in the style of buildings. A gentleman from New Albany has invented a plan for the manufacture of marbleized glass of such perfection of pattern and exact imitation that it requires the closest examination to detect it from genuine marble. This glass can be made plain, white or variegated, to suit any taste or requirement, the *Louisville Ledger* says, and can be made from one to two inches in thickness at the New Albany Plate Glass Works. It is claimed that for ornamental

house fronts, floors or pavements, this marbleized glass is superior to marble in durability. It will maintain its colors, they being indestructible. A patent on this invention has, we understand, been taken out, and it is claimed that the great cheapness of this marbleized glass, as compared with marble, will bring it into general use for house fronts, floors and ornaments.—*Chicago Journal*.

INTERESTING FACTS WITH REGARD TO IRON AND CADMIUM.—Dr. Schön announces that the metal cadmium may, under certain circumstances, be rendered indifferent to the action of acids. It has long been known that iron, if plunged into acid of a certain degree of concentration acquires a peculiar surface condition, rendering it indifferent to the action of the strongest acid. Iron which has undergone this surface change has been termed passive. It appears, too, that such iron has acquired some peculiar physical qualities, since it will form a galvanic circuit with ordinary iron; the changed metal behaving electrically negative to the other. That such iron has really been decidedly altered in character is evinced again by the fact that it refuses to reduce copper from solutions of its salts.

It appears, from Dr. Schön's observation, that if cadmium is wrapped with some platinum wire, it may be placed, without being in the least acted upon, in strong nitric acid; though if the wire surrounding is removed, or if the acid is diluted, the cadmium is instantly attacked, thus showing that the passivity of the cadmium is due entirely to its contact with the platinum. The same author has shown that tin will give the same phenomenon.

CONSUMPTION OF SMOKE.—At the November meeting of the Scientific and Mechanical Society of Manchester, England, the discussion turned on smoke-consuming furnaces. After a thoroughly scientific exposure of the generally accepted theory of smoke-consumption, and of the hundred and one inventions, self-acting and otherwise, that have been applied for this purpose, the practical experience of the members was brought to bear upon it. Self-acting apparatus was voted to be of no practical use whatever. The system of admitting air behind the bridge found a few supporters, but after being brought to the test of experience, even with all its appliances of hollow fire-bars and perforated bridge, its advantages were found to be very doubtful. The opinion of the majority of the members was, that a short dead plate, with perforated fire-door, and an efficient stoker, is the best smoke-consuming apparatus extant, and coupled with plenty of boiler power, to avoid forcing the fires.

ACTION OF LIGHT ON CANE SUGAR SOLUTIONS.—M. Raoult communicates the fact that a solution of cane sugar may be converted into grape sugar (glucose) under the influence of light. The observation was made in the following manner:

A concentrated aqueous solution of cane sugar was placed in glass tubes, which were sealed while their contents were boiling. These were placed near each other, under the same conditions, with the sole difference that one was kept in total darkness, while the other was exposed to the bright daylight. Several months later the tubes were examined, when both solutions were found, under the microscope, to be free from vegetable matter. The solution, however, which had been in the light, at once gave an abundant red precipitate with a copper salt on addition of a free alkali (the test for grape sugar); while the contents of the tube kept in the dark, gave no sign of the reaction.

GAS POKERS.—It is only quite recently that anything has been done to obviate the trouble invariably attendant upon kindling fires. Various fire kindlers, such as cakes of rosin and sawdust, etc., have been introduced, and found very serviceable; but the latest and most original effort in this direction is a "gas poker," simply a hollow iron tube, shaped like a poker, with perforated holes in one extremity, and the other arranged with a flexible tube, of sufficient length to connect the "poker," when thrust into the stove or grate, with the nearest gas burner. This done a match will light the gas, and in a few minutes you have a fire, whether of wood or coal, without any trouble or litter. Any kind of coal but anthracite may thus be readily lighted. For city use, or where ever gas is used this is the simplest and most effective idea yet brought out.

MECHANICAL PROGRESS.

Wood Carving by Machinery.

There seems to be no limit to the adaptability of machinery to the arts, whether for manufacturing or decorative purposes. For machine carving several different processes have been devised; none of which appear to be so simple or really artistic as the one latest announced, the object of which is to impress upon wood, by charring it, any design however elaborate. This process may be described substantially as follows:

This object is effected by engraving the design upon the face of hollow iron cylinders, the lines forming the design being left raised as in wood engraving. According to the kind of work required, the cylinders vary in size, from a diameter of a few inches to above two feet. The cylinder is fixed on an axis, and adjusted by means of screws and a lever to the proper distance from another cylinder, which is not engraved. To make this adjustment correctly and to secure the uniform rotation of the engraved cylinder, one end is closed, except the hole into which the axis is screwed and a few small holes to secure the free circulation of air. Two gas pipes are passed into the engraved cylinder; through one of these gas is supplied, and it is ignited, the jets being so placed that they play against the side of the cylinder. A second pipe, also perforated with holes in the sides, is supplied with air, by means of a rapidly revolving fan. By this means a powerful blast is urged upon the gas flame, and a most energetic blow pipe is formed. The gas flames, which played at first steadily against the side, now sweep with a roaring noise the interior of the cylinder, which notwithstanding the mass of metal, can be rapidly made red hot throughout by its action.

The cylinder being sufficiently hot, a smooth board is pushed between the two cylinders and subjected to considerable pressure. By this the design, which is upon the roller, is pressed and burnt into the timber, every line being faithfully and deeply marked. Plank after plank passes on through the rollers in steady order, so that in a comparatively short time many hundred feet may be thus impressed with the pattern on the cylinder.

Where there is a continuous pattern, as for moldings, the cylinder is small, and is, of course, with every revolution repeating itself. Where ornamented panels are required, the circumference of the cylinder is the length of the panel, and boards of the same length are regularly passed through, every one of them receiving a repetition of the pattern. The heat of the cylinder can be regulated with very great nicety, by turning the gas on or off, and by adjusting the supply of air to the blow pipe.

When the board has passed through the charring operation, it passes to the workman, who scrapes it down over the entire surface, so as to bring out the lights, and produce the best effects. When this is accomplished, the surface is varnished or polished, and the result is an ornamental panel or moulding of the greatest beauty, and of remarkable permanence.

White woods, as sycamore and lino, are employed for this work. It is easy also, by this process, to give to the less expensive varieties of wood the peculiar characteristics of the more expensive kinds; rosewood and walnut are very excellently imitated, and upon these again any pattern can be impressed.

The advantages of this process appear to be the facility and cheapness with which we can place on wood the most artistic designs; it is not of course applicable to the production of a single specimen; but, where we have to repeat the same design, with every repetition the price is reduced. The beautiful sepia, or chocolate color, received by the woods employed in the process are especially pleasing.

Any person who has whittled down a piece of charred, fluted, white wood, will at once call to mind the beautiful and variegated shades that can be readily produced by cutting more or less deeply into the charred surface.

A mixture of glycerine and litharge forms a durable cement, which will resist a temperature of 275°. It sets rapidly, and should be used immediately after mixing.

Fire-Proof Wood for Buildings.

The destructive fires of the year 1871 have directed public attention more strongly than ever before to the necessity of more secure provision against this danger in the construction of our dwellings, shops and stores. In the denser portions of large cities, a law forbidding the erection of frame buildings of any kind is manifestly just, and removes in a very great measure the liability to wide-spread conflagrations like that at Chicago. But in other localities in the suburbs of cities and towns, villages and rural neighborhoods, wood will continue the ordinary material for building, and people who choose it for economical or other reasons cannot be compelled, even were such a measure desirable, to adopt brick, stone or iron in its stead.

It is, therefore, a fact worthy of general notice that wood may be rendered, without great labor or expense, nearly as capable of resisting fire as brick or stone. This is done by soaking the dried lumber a short time in a solution of soluble glass, a silicate of soda or potash, after which it is immersed in lime-water, by which the silicate of soda is decomposed and the pores of the wood filled with a silicate of lime. This substance is fire-proof and cannot be dissolved in water, and its presence and effect in the fibre of the wood are, therefore, permanent. Soluble glass is readily obtained, being already largely used for various purposes in this country. There is no patent upon the process, and it can therefore be used by any builder or lumber dealer.

The comparative cheapness of frame buildings, in the erection of which the tastes of the owner as to style and ornament may be consulted with but a moderate tax upon his means, will maintain their popularity at least until some equally convenient and inexpensive material is discovered. A process by which their exposure to the ravages of fire can be remedied in so great a degree is of too great value to the community to be lightly overlooked.

COATING METALLIC OBJECTS WITH A BLACK-BROWN VARNISH.—On the bottom of a cylindrical cast-iron vessel, 18 inches high, is placed a layer, one-half inch thick, of coal-dust (bituminous of course); upon this is placed an iron grating, and thereon are put the iron, steel, or other metallic objects intended to be coated with the varnish. The vessel, having been first closed with a well-fitting lid, is next placed on a bright coke fire, and heated for about a quarter of an hour just to an incipient red heat. The vessel is then removed from the fire, and on the lid being removed, after about ten minutes, the metallic objects will be found coated very uniformly with a good and durable varnish, which resists bending, as well as a high temperature, without cracking or coming off. Very small objects, such as hooks and eyes for instance, are better placed along with some coal-dust in a coffee roasting apparatus, and this turned, as is usual in the roasting of coffee, until the metallic objects have obtained the desired depth of color and are uniformly coated with the varnish.—*Chemical News*.

A BUFFALO man must have the credit for the most novel invention yet proposed for propelling boats on the canal. The power is not attached to the boat, but the entire body of water in the canal is moved, and the current thus created is used as the propelling power. The plan embraces a wall laid in the center of the canal its entire length, dividing it into two equal channels. At the head of each level is placed an immersed wheel of peculiar construction, which is moved by a stationary engine, and the action of which is to throw the water from one of the channels into the other. A current is thus created from the machinery in one channel, and toward it in the other.—*Artisan*.

A NEW safe has been invented which makes things very unpleasant for burglars. The walls are filled with gunpowder in such a manner that the blows of a sledge or the cutting of a chisel in the attempt to rob the safe will ignite the powder, blow off the outer crust, annihilate the burglar, and leave the contents of the safe uninjured.

The smallest steam engine in the world is said to be in Greenwich, England. It will stand on a three-penny piece; so small are some of the parts that they require a powerful magnifying glass to see their form. The whole weight of the model is less than three-penny weight. When working its crank shaft performs from twenty to thirty thousand revolutions in a minute.

FARM HINTS.

A Cheap Way to Make Cold Frames.

Cold frames would often be used by farmers and others, were it not for the large expense attending the glass, generally thought indispensable in their construction. A correspondent of the *Canadian Farmer*, however, gives the following cheap manner of constructing them, which is within the reach of every one:

Make as many frames as you require to cover your beds, of narrow strips of pine; and if you are not carpenter enough to put them together with mortice and tenon, halve them together. The frames should be six feet long and three wide, with a piece across the middle of the frame. This had better be merely fitted in between the sides, and nailed, more to keep the frames apart than any thing else. Now get good stout twine; put in tacks all round the frame, six inches apart; wind the twine round the tacks from side to side, until the frame is full that way; then go from tack to tack, from end to end, but as you pass the ball of twine down across the first twines, take a turn each time round the cross strings; you will thus have a netting of six inches square over the whole. This will be quite strong enough, but you may put the strings closer if you don't think it sufficient. When you have finished, make fast the twine and drive in all the tacks level with the surface of the frame.

Get some strong white paper; old newspapers will do if the paper is thick; damp them a little (only just damp); paste them together, and stick them over the frame, well pasting the wood frames first with well boiled thick flour paste; be sure the paste is thick and well boiled. Let the paper come all round the edges of the frames; then put them by to dry. When dry, if the work has been well done, the paper will be smooth and as tight as a drum-head. Don't damp the paper too much, in the first place, or it will crack and break in the drying.

Now, get some well boiled linseed oil, get some dryers put into it, and dissolve in it; then with a paint brush go over the whole frames, wood, paper, string and all; give them a good coat on both sides, and put the frames by to dry; they will be dry in a day or two, and will be as serviceable as the best glass while they last, which with care will be from two to three years, and they can be fresh covered or patched at any time. Of course dogs and poultry must be kept off them, and they must be carefully used, but for service they are really better than glass, as the plants grow under them never scald with the sun. If thought better, the strings may be put on both sides of the paper, but it is scarcely necessary.

With these frames, on beds prepared as before mentioned, everything from a turnip plant to a melon can be raised in perfection; and after the beds are done with for turnips, melons and cucumbers can be raised in any quantity, with the advantage that as the cold weather comes on in the fall, if the melons are not fully ripe, they may be covered, and thus the very latest be brought to full perfection. These sashes answer as well for hot-beds as for the cold frames. As they are very light, they must be properly weighted in windy weather or exposed situations.

Raising Cabbage Plants.

I will give your readers my way of raising cabbage plants as practiced the last few years. Having noticed a plant or two in my onion bed in the summer of 1868, that seemed to thrive finely, while others, sown in several places, fell a prey to the black cabbage fly, I tried sowing onion seed with the cabbage. The cabbage came up, and was nearly all ruined before the onions came, but a few late ones, coming after the onions, thrived finely. Since that time I set out onions, or sow and let them get up before the cabbage is sowed, and have succeeded every year, having plants to spare, while nearly all others hereabouts fail.

T. T.

SIERRA VALLEY.—The Grass Valley Republican has the following on this beautiful locality: This beautiful valley, stretching for thirty miles along parallel with the summit of the Sierras, is settling up rapidly. A large addition is expected to the population of the valley the coming spring and summer from Illinois. The best beef and butter in the State come from Sierra Valley.

LIVE CATTLE WEIGHED BY MEASURE.—The only instrument necessary is a measure with feet and inches marked upon it. The girth is the circumference of the animal just behind the shoulder blades. The length in the distance from the shoulder blades. The superficial feet are obtained by multiplying the girth and length. The following table contains the rule to ascertain the weight of the animal.

If less than a foot in girth, multiply the superficial feet by eight. If less than three and more than one, multiply the superficial feet by eleven.

If less than five and more than three, multiply the superficial feet by sixteen.

If less than seven and more than five, multiply superficial feet by twenty-five.

If less than nine and more than seven, multiply superficial feet by thirty-three.

If less than eleven and more than nine, multiply superficial feet by forty-two.

Example.—Suppose a pig to measure in girth two feet, and length one foot and nine inches; there would be three and a half feet, which multiplied by eleven, gives thirty-eight and a half pounds, as the weight of the animal when dressed. In this way the weight of the quarters can be substantially ascertained during life.

EASTERN QUAIL IN CALIFORNIA.—The California Acclimatizing Society received on Tuesday, by mail, from St Louis, twenty dozen Eastern quail, which were ordered nearly a year ago, but owing to the strict laws against trapping and the unwillingness of farmers to allow trapping on their grounds because the quail are much prized as enemies of the insects which damage grain fields, the fulfillment of the order has been delayed until the present time. The Directors of the Society will set these birds at large in different parts of the State on grounds where it is supposed they will be permitted to breed in peace.

PECANS.—Pecan trees are now being extensively planted in Los Angeles county. The pecan tree nuts at present imported bring a much higher price than the English walnuts, and it is thought that tree will thrive here equally as well.

Santa Cruz Farmers' Club.

[Reported for the Press, by Roger Conant.]

The Club met on Saturday afternoon, Feb. 17th, at 1 o'clock, P.M., President Mattison in the chair.

The Library Committee recommended a number of books which were ordered.

D. M. Locke from the committee on "The disease now raging among the stock on the Errington estate in Scott Valley," submitted the following report:

"Gentlemen of the Club. Six cows have died upon this farm, one at the time of calving, one with hoven, and four with a disease, some call 'dropsy of the joints.' First symptoms, weakness in the joints, especially of the hinder parts, inability to raise or walk after being helped up. Sick about three weeks. Were in good condition and had good appetite all the time. Post-mortem examination revealed nothing unusual except that the fluid around the joints was thin and yellow. The remedies tried seemed to have no effect."

The discussion on the Estray Law of Santa Cruz county was resumed.

Mr. Feeley.—I advocate the repeal of this Estray law because the farmers of this county are in favor of a fence law, and this Estray law is a no-fence law.

Mr. Mattison.—We also need a good Estray law. The present one should be amended or a new and better one enacted.

The Secretary read the following letter from Hon. Thomas Beck, in reply to the resolution on the Fence Law.

SACRAMENTO, Feb 7th, 1872.

R. CONANT ESQ., SANTA CRUZ.—Dear Sir: Yours of 3d inst. just received and contents noted. In answer allow me to assure your Club that the fence law now in force in our county will not be repealed or altered.

THOMAS BECK.

On motion Mr. Conant was added to the committee on the Estray law, and the committee was instructed to make further report at the next meeting.

A brief but animated discussion then took place on matters pertaining to the general interests of the Club. A committee of three, consisting of Messrs. Conant, Feeley, and Humphreys, was appointed to the subject under consideration, and report at some subsequent meeting.

Orville Root and B. R. DeWolfe were proposed and elected members of the Club. Adjourned to Saturday, March 2d, 1872.

Sacramento Farmers' Club.

The club met as per adjournment on Saturday, March 2d—Vice-President Manlove in the chair.

Robert Williamson and E. F. Aiken each read a valuable essay on alkali soils and the best mode of reclaiming them. They agreed that the best and only really effectual mode is that of drainage. While manuring and cultivating certain kinds of crops, such as beets, are good to assist, yet complete and permanent reclamation can only be accomplished by thorough drainage.

J. R. Johnston remarked that sand mixed with alkali soil produced temporary relief.

Hoyt—This is of but little account as the alkali soon rises through the sand to the surface, even though the sand be several feet deep. For instance, the sandy soils about the City Cemetery are impregnated with alkali, though six or eight feet deep. I have noticed that wherever the surface soil contains alkali there is a hardpan underneath, and I have thought this hardpan has something to do with the nature of the surface soil. I agree with William and Aiken that drainage is the best way to extract alkali from the soil. I have noticed that where the water in a well is strongly impregnated with alkali the water becomes better the more is drawn from it, proving that the water brings the soda or saline substance with it. Water running out of the soil through drains would do the same thing.

Williamson—The alkali in the soil may have some salt in it, but I think the principal ingredient is potash.

Aiken—I notice Williamson recommends earthen pipe for underground drainage of alkali soil. If this is semi-circular, in the form of the old Spanish tiles, and the convex side turned up, this will do very well; but if round pipe, like that used by Clark for underground irrigation, I think it will not be good. I would suggest the use of redwood boards, made into V troughs, the trough side down.

The subject for discussion at the meeting, to be held next Saturday at the agricultural rooms in the Pavilion, is subsoiling and its effect on the soil and crops. S. N. Baker and P. H. Murphy were appointed to read essays on the subject.

Manlove exhibited samples of raisins made by himself from the Muscat of Alexandria grape. The raisins are two years old, of good size and color, and were pronounced by all as finely flavored as any of the best quality imported. He also exhibited some very fine samples of the Languedoc and paper-shell almonds grown by himself. They were of good size and quality.

Kendall exhibited samples of the common blue figs, dried and packed, and covered with a fine coating of white sugar, which had accumulated on the surface. The samples of figs being exhibited at these meetings show conclusively that the art of preparing figs is being learned by our people and that this valuable fruit will hereafter be utilized better than in the past. The Secretary exhibited some very fine specimens of the white winter Pearmain apple, grown by Geo. W. Applegate, six miles above Auburn. They were a little past their best eating period. Mr. Applegate also sent to the Club samples of a very fine red apple, which he desired the Club to name. It is rather, above the medium size of California winter apples, the red somewhat in streaks, of a pleasant subacid.

The Club classed it as the Red Pearmain.

Johnston exhibited specimens of the Red Romanite, in splendid condition, as fresh and juicy as our best winter apples get to be. They were from El Dorado county. These specimens of apples from our foothill counties indicate very plainly that these districts are most excellently adapted to the culture of winter varieties of fruit, and that all that is wanted to supply the entire State with an abundance of excellent winter apples until the fruit shall come again is good orchards of late varieties, well up the mountains. Here is a good field for our orchardists to make money.

A LITTLE MORE BRAINS IN THE BUTTER. The Hon. Daniel Needham in his address before the Dairymen's Convention, said that if farmers and farmers' wives would put a little more brains into their butter; educate themselves more thoroughly in the art of making and marketing—they would readily double if not triple the income from this department of their farming pursuit. This is a fact which will well bear repeating.

AGRICULTURAL NOTES.

CALIFORNIA.

AMADOR COUNTY.

Ledger, Feb. 24: VALUE OF MOUNTAIN LAND.—At this time, when obstacles are being thrown in the way of mountain agriculture, it might not be amiss to state a few facts in relation to the value of mountain lands for agricultural purposes, and what these lands are capable of yielding under proper cultivation. There is a small piece of ground, not exceeding four acres, under cultivation, situated on Jackson creek, in this county, that well illustrates our subject; this land has been tilled for the last twenty years, and is cultivated to vegetables, grapes and fruits; it is owned by six men; from this small piece of ground, from one to two two-horse wagon-loads of vegetables, fruits and grapes in their season, are daily sent to the markets of the county, the vegetables fresh from the ground the year through; not less than 365 loads are sold annually of the various products of this spot, averaging \$15 per load, equal to \$5,625 per year; 800 gallons of wine manufactured and sold on the premises, realizing \$600; making a total of receipts from four acres \$6,225, or at the rate of \$1,556.25 per acre, besides ten persons being supplied with vegetables, fruit and wine, not included in the above sum, as also three cows and four horses fed from the products of this small spot of ground. Can valley cultivation exceed this yield?

FRESNO.

Expositor, Feb. 28: SHOWERS.—We have had frequent showers of rain during the past week, and the ground in consequence has not dried out much, but on the contrary we think has gained some in moisture, if such a thing were possible. There has certainly never been a more favorable season to our memory for farming, than this.

RAIN FALL.—Mr. F. Jensen of Big Dry Creek, furnishes the following statistics regarding the rain fall the present season. The whole amount of rain up to February 22d, was 18.95. On February 22d, .91; 23d, .5; 25th, 1.20; 26th, .75. Total for the season, 16.87.

KERN.

Cowier, Feb 24: The mines at Kernville, from their first discovery, have enjoyed a good reputation, and are reputed among miners to manifest infallible signs of a permanent and extensive character. They are near the North Fork of Kern river, which furnishes a fine water power, and is there an ample stream; in summer, clear as crystal, and as cold as the icy sources from which it descends. The climate is healthful, delightful, and warm enough to admit the growth of the entire range of fruits grown in this State. The town, situated on a level, alluvial tract, admitting of easy irrigation, might be surrounded with the finest gardens and made one of the most pleasant mountain towns in the State. As it is, Nature has made it an agreeable place of residence; but under the new stimulus industrial enterprise it is about to receive, we may soon look for a great development of its now comparatively dormant resources.

LOS ANGELES.

News, Feb. 24: The rain which commenced falling at 5 o'clock, yesterday morning, and continued for some four or five hours, although limited in quantity, is really immeasurable in the benefits likely to accrue from it. The entire surface of the country seems to have been touched by some fairy's wand; the verdure of the hills is fresher and brighter, and every blade bathed with the heavenly dew, smilingly defies the scorching sunbeam.

FINE FRUIT.—Some of the largest oranges we have yet seen in the valley were presented us yesterday. They were from the orchard of Mrs. Dr. Shaw, on Main street. A fine bunch of three oranges of extraordinary size was part of the first crop of a seven year old tree. Another bunch consisting of seven similar oranges was obtained from the second crop of an eight year old. Immense specimens of the Sicily lemon accompanied the oranges, and limes, at least, two and a half inches in length, the first crop of a five year old tree. This lime tree has the fruit now growing upon it in all its stages, from the bud to maturity.

HEAVY WOOL PURCHASES.—The firm of Newmark & Co. have purchased the spring clip of the numerous flocks of Burnett, Bixby, and others, aggregating half a million pounds.

ARTESIAN BORING MACHINERY.—Among

the shipments from the depot yesterday, we noticed a lot of boring machinery and 100 pieces of artesian well piping consigned for George Stone, of San Diego.

SHIPMENTS.—The following are the shipments per steamer California on the 18th: Wine, 2 half barrels and 2 pipes; liquor, 4 barrels; oranges, 1,129 boxes; limes and lemons, 42 boxes; dry hides, 106; salt hides, 91; sheepskins, 12 bundles; honey, 8 boxes; beeswax, 1 box; dried fruit, 30 packages; assorted merchandise, 30 packages; rye, 96 sacks; pop corn, 1 sack; corn, 126 sacks; cornmeal, 200 sacks; brandy, 5 pipes; eggs, 14 cases; tallow, 1 barrel and 3 cases; tomatoes, 9 boxes; trees, 2 packages; beets, 1 sack; crude bullion, 945 bars.

News, March 2: BEAUTIFYING.—No more pleasant employment can be indulged in by our citizens than beautifying their homes by planting trees and shrubbery, the mildness of our climate rendering it easy to keep them fresh and green the year round. Among others, we notice that Hon. A. J. King has just completed the setting out of several rows of orange trees in front of his fine residence in the western part of the city.

RAIN AND THE CROPS.—It is now beyond the possibility of a doubt but that we will have rain enough this season to insure a bountiful crop, and even the most despondent can now look forward to a rich reward for their labors. After two years of drouth our farmers have become suspicious, and the welcome rain is received with a double joy; and their benefit in a great measure controls that of our city in stimulating the capitalist to invest in substantial improvements.

Mr. A. Gassen, who came in from Milquatay, Saturday night last, brings us a handful of green wheat, with stalks nearly two feet long. He says it is an average specimen of a field of 30 acres. Mr. Gassen reports the rainfall at that place as very heavy.

We think it safe to say that all the low lands are sure to yield a big crop. Without a drop more of rain the uplands would probably give from 10 to 15 bushels per acre. With one and a half inches of rain in March and April they will give from 30 to 50 bushels per acre. We have every reason to expect more rain than that. On the whole we consider the situation most satisfactory.

MERCED.

Snelling Argus, Feb. 24: We took a ride among the farms in the southern portion of our county this week, and could not fail to be pleased at the fine crops everywhere presented. The farmers are generally nearly done sowing their fields, and all early sown grain is exceedingly forward and looks healthy, the stand being universally good. On Mariposa Creek an unusually large amount of land has been put in cultivation, and the summer-fallow and volunteer crops are as far advanced as they generally are in that locality at the first of April. On Bear Creek we observed some fields of young grain from ten inches to a foot in height, and growing apparently as rapid as could be wished. On the west side of the San Joaquin river, rain in abundance has fallen, and the prospect for heavy crops is more flattering than in any former season since the settlement of the country. The soil in that portion of the county is exceedingly rich and grain matures early in the season, so that when the country is favored with heavy rains during the winter, crops are not so liable to blight as in localities where they mature later in the season.

SANTA BARBARA.

FARMING IN SANTA BARBARA.—A farmer who has resided some time in Santa Barbara county, California, writes to a local paper in Wisconsin as follows:

I never saw a country so productive. Last year we raised potatoes at the rate of 600 bushels per acre. So of sheep and bees. I know a single swarm of bees which in one year increased to one dozen. I know of twelve swarms which in eight months increased to over sixty, and have produced a large amount of honey. I honestly think the same labor will produce twice as much here as there. Besides, we have five months here for seed sowing. We begin in December, and plow and sow and plant till May—and we can put in an immense amount of crops. Then, too, the harvest season is very long—it begins by the middle of May, and we keep on reaping and heading till the middle of August. Then we thresh and haul off, with no fear of rains before our eyes till December comes again. With such seasons, is it strange to you that, with but two or three hired men, I have been able to put in and gather a harvest of from five to six thousand

and bushels of grain, and expect to harvest about 5,000 bushels of corn, besides raising some eight hundred dollars worth of other products.

SACRAMENTO.

Union, Feb. 29: INCREASE OF STOCK.—At a meeting held yesterday the Sacramento Valley Beet Sugar Company decided to increase its capital from \$100,000 to \$200,000.

SUGAR BEET SEED.—The Sacramento Valley Beet Sugar Company have received from Germany about 200 bags of sugar beet seed. It is the intention of the company to plant about 700 acres in beets this season.

SANTA CLARA.

Mercury, Feb. 29: The Board of Supervisors, on the 13th inst., granted permission to Messrs. C. T. Settle, A. D. Colton, J. Downs, John Bettencourt, Oliver Cottle, Sylvester Newhall, Louis Barnhisle, Frank David, Miles Hills, Edwin Arne and Mrs. F. B. Fuller, to plant shade trees along the Alabara and Settle and Arne roads, in front of their lands. The trees are to be the Australian Blue Gum, Lombardy Poplar, Carolina Poplar, Cork Bark Elm, Black Walnut and Wellingtonian Gigantica. The trees are to be planted on each side of the road, in a line, not less than 16 nor more than 50 feet apart, and the road is to be 40 feet in width between the trees.

EARLY RHUBARB.—Mr. M. Britton, of this township, brought to our office, on Saturday last, a bunch of rhubarb, grown in the open air, some of the stalks measuring sixteen inches in length by one inch in diameter. That will do very well for the 24th of February.

SAN DIEGO.

Union, Feb. 29: The almond trees at Mr. James O. Miner's place in the Cajon valley are now in full blossom, and their appearance indicates a good crop of the nuts this season. The trees are now five years old from the seed. They bore the first time last year, but yielded a very small quantity of nuts.

The whales have commenced their annual migration up the coast, and our whalers are beginning to have a busy time again. Yesterday a large fellow was taken, the first of the "up season," but as our informant has every time under-guessed the amount, he declines to make an estimate of the number of barrels contained in this last capture.

Passengers by the stage from Fort Yuma report a snow storm in the mountains between Jacumba and the Desert. The snow was falling on Saturday morning as the stage descended the mountains, and the hills were then covered with snow to the depth of three inches.

That the rains of this season have so far been sufficient is demonstrated by the thrifty condition of the crops throughout the county. It is reasonable to expect fair rains in March and April—enough to bring the total rainfall of the season up to 10 inches, at least; and this will insure a larger harvest than has been anticipated by the most sanguine among us.

SHELL FISH.—A party of gentlemen made an excursion to the head of the bay on Tuesday, and returned yesterday morning with a large lot of edible shell fish of different varieties. Among them were the razor and soft shell clam; (the latter they say abounded in the locality where they gathered them) cockerel, and a species of bivalve with a fluted or ribbed shell, which they claim is superior to any shell fish for eating, excepting, of course, the oyster.

WILD FLOWERS.—A handsome bouquet of wild flowers, gathered near La Playa, in the ravines and on the hills, was shown to us yesterday by the lady who culled them. The bouquet contained 29 different varieties, embracing nearly every color that is usually seen in a nosegay of choice garden flowers.

SAN JOAQUIN.

Herald, Feb. 22: WHEAT INJURED.—There is something new in the history of wheat raising in California. In the vicinity of Banta's some eighty acres of winter sown wheat is entirely destroyed by a worm that cuts the roots entirely off. It is a large fat worm, such we believe as never before has been observed in the State. What is singular, the summer sown grain surrounding those eighty acres is in splendid condition, quite escaping the attack of the worm. Not far distant from these ravaged acres, a farmer had succeeded in summer fallowing his farm, with the exception of four acres, which are winter sown; the wheat on these four acres is entirely destroyed by the worm, while the remainder of his farm promises fairly to groan with the burden of wheat.

Independent, Feb. 26: GROWING TOO

FAST.—The young wheat in many parts of the valley is growing with a rapidity and strength never before known, and it is feared that much of the crop, more particularly that on deep, rich soil, will be greatly damaged by "lodging" or falling down because of its own weight. Last Saturday a farmer told us that he would be compelled to go over his wheat fields with a mower and cut off the tops with a view of checking the growth in the mean-time, and strengthening the stalks near the ground.

SISKIYOU.

Yreka Union, Feb. 24: MOUNTAIN DIARRIES.—The day is not far distant when Siskiyou county will bear the same relation to California that Orange county does to New York. Already the Siskiyou butter has a reputation in the San Francisco market unequalled by any in the State. We attribute this mainly to the fact that our county contains a large number of snow-fed streams, in which butter, if worked entirely free from butter milk, can be kept sweet for seven or eight months after it is made. The butter is canned and hermetically sealed.

We know of one man in Scott Valley who has shipped \$700 worth of butter to San Francisco this season, and another in Shasta Valley whose shipments at various times during the fall have exceeded \$1,250 in value. And in both the above cases the parties were men of limited capital. We look forward to the time when men of ample means will engage in this business and put up commodious barns for their stock, for experience has demonstrated the fact that the better shelter stock receives the less food they require. We consider the Devon cattle the best adapted to our country, as they are active and hardy. As milkers they do not give so much in quantity as the Ayrshires or Alderneys but the milk is richer and better adapted to butter making. The herds of common milk cattle can be perceptibly improved in the short space of eight years by crossing them with the Devon stock.

STANISLAUS.

News, Feb. 23: In this county it is safe to estimate the number of acres sown to grain, as being one-fourth larger than any previous year. The last average crop year was in 1869, when the grain product of Stanislaus was not far from 4,000,000 bushels. We did not then have near as favorable a season as the present up to date. In 1869, we had, not exceeding 12,000 acres sown to wheat, in the whole division of our county west of the San Joaquin river. In the same section we will have this season from 30,000 to 40,000 as against 12,000 then. The division of our county, situated north of the river Stanislaus, as well as the whole eastern border skirting the foothills for a distance of forty miles, was then cultivated to but a limited extent. Time and cultivation having demonstrated that the upland or foothill region, possesses not only a valuable soil for grain-growing purposes, but that the seasons, so far as rainfall is concerned, is also much surer than any other portions of the valley, has caused a great breadth of land to be cultivated in that region. From these facts, we have every reason on our side, when we place the probable grain yield of Stanislaus County for the year 1872, at six and a half million bushels. When it is recollected that we rank as the second greatest wool-producing county in the State, and still further remember that the entire population of the county is placed at 6,500 souls, the commercial world at least can begin to understand something of the productiveness of our soil, as well as the energy and industry of our people.

YUBA.

Appeal, Feb. 29: FAT CATTLE.—Henry C. Hyde received a car load of fat cattle from Reno yesterday. They have been wintering on the Humboldt river and are in prime order, and will now be consumed by the Marysvillians. Fat cattle are at present very scarce and command high prices.

SLOUGH FILLING.—Yesterday the waters of the slough were rising rapidly, owing to the waters of the Feather river having found an inlet under the culvert at the head of the slough. Napoleon Square was partially flooded at noon yesterday, and unless the waters are checked in their inflow, they will rise inside of the levee to a level with the Feather, which would submerge the low lands on that side of the slough. A party, among whom was Alderman Blodgett, went out to attend to the leak as soon as it was discovered.

The tule country between Sacramento or Washington and the tule House and Davisville, is now one vast sea, and when the wind blows it is very rough at times—the waves rolling quite heavily.

OREGON.

Oregonian, Feb. 17th: OREGON STATE HORTICULTURAL SOCIETY.—A special meeting of this Society was held on Wednesday afternoon and evening. The object of this meeting was to revise and arrange a premium list. It was decided to hold a fair in this city some time in June, and to exhibit in connection with the State Fair at Salem, next Fall. The Society at present numbers 54 members and acquisitions to the membership are constantly being made. The exhibition for this year will excel that of last year.

GAME IN THE CITY.—During Sunday, while the city was engaged in devotional exercises, or contemplations, the upper ward was thrown into some excitement by the appearance of a fine, large antlered buck in the street. When our informant first saw him, he was coming down Fourth street at a much faster gate than allowed by ordinance. He turned down Lincoln and made for the river, into which he plunged and struck out for the other side. Some persons on the east side seeing him coming, put out in a skiff, and after an exciting chase, captured him.

REAL ESTATE MOVEMENT.—The real estate market is showing signs of greater activity than for some time past. Messrs. Stitzel & Upton, Real Estate Brokers, negotiated sales during the week ending Feb. 10th, as follows: Washington county, farming lands, \$24,000; Clackamas county, farming lands, \$1,500; Portland, city lots, \$1,800; East Portland, lots, \$5,100.

WASCO.

Mountaineer, Feb. 10: The cattle in this particular vicinity are commencing to succumb, and a few have died. Hay is becoming scarcer, and we have heard that some of our farmers were asking forty and fifty dollars per ton in the stack and eighty dollars delivered in town.

The Walla Walla papers say that there is very little snow lying on the ground in that county, but that the weather has been cold and a large number of sheep and cattle have died, principally for want of shelter.

From Grant county we have received the best kind of news, and to prove that the winter has been mild and that cattle have done exceedingly well, Mr. Geo. Edgar, of Edgar & Co's. stage line, brought down on his last trip a bunch of green grass. We are inclined to the opinion that Grant is the "Banner" county east of the mountains for stock raising.

All the news that we have received from the upper Yakima, over in Washington Territory, is of a discouraging nature. From the lower portion of the valley, however, we believe the cattle are doing better.

At present it is almost impossible to form anything like a correct idea of the loss the cattle men are going to sustain. It depends how the spring opens and upon several other contingencies. However, taken all together, the winter has not been so severe and in no way so disastrous as that of '61 and '62, and we are inclined to believe that when we come to sum up the entire loss of the winter, it will fall far short of the amount now supposed by many.

A cougar was killed in Sweet Home Valley.

The *Ajac* carried 2,000 boxes of apples to San Francisco on her last trip.

WASHINGTON.

Walla Walla Union, Feb. 17: During the past few days of fine weather we see the farmers are beginning to get ready for operations. They are getting plows repaired, or buying new ones, and if the weather continues fair, will soon be engaged in active operations. With a favorable spring, we may expect to see an abundant harvest this summer.

MORTALITY AMONG THE HORSES.—We hear that in some parts of the valley there are numbers of horses sick, and some have died, with what is supposed to be mountain fever. So far as we have heard the disease seems to be unmanageable, and runs its course regardless of drugs and medicines.

FROM THE YAKIMA.—We learn that the winter near the mouth of the Natches river, in the Upper Yakima Valley, has been very severe; the snow was 14 inches deep. No cattle had died in that part of the valley from the effects of the weather, as all the stock raisers up that way had plenty of feed; some had been feeding for one, and some for two months. Some 30 or 40 miles further down the valley a good many cattle have died, owing to the distance stock had to range for feed. After the storm set in they could not be driven home through the crusted snow. It is a matter of doubt how many may survive.

CORRESPONDENCE.

Appreciation of the Rural Press.

EDITORS PRESS:—I have just had the pleasure, accidentally, of reading your handsome paper, it being Dec. 2, No. 22, sent to me by a friend; and two articles, among others, interested me: One on "Application of Science to Farming," etc., which really means, make farming attractive by so earnestly engaging the mind and curiosity to such extent as almost to cause forgetfulness of the rugged toil, and to make home happy, so that no other place will be regarded by the young as any more pleasant. And with all the charms and mysteries of Nature, as they exist in the life and phenomena of animal and vegetable growth, when examined and understood, no other occupation of man possesses a tithe of the resources and facilities for delight and entertainment, as does the broad and deep scope of agriculture, when it is presented in the beautiful mirror or laboratory of science—where experiment develops charming truth; and that, in turn, when appropriated, yields both profit and pleasure, in almost unlimited form and variety.

And this is the gauge for knowledge, then wisdom, then happiness—through which home and farm life are made pleasant, as the article in question requires that they should be. Then let our young men, and young women, too, read books on natural history, on botany, on chemistry, geology, astronomy, horticulture, floriculture, and the like, instead of running to saloons and vain places, and very soon they will begin to relish and find such reading and study far more delightful than the light, exciting, trashy literature, which floods the markets—they will prefer and find more satisfaction in agricultural and horticultural magazines, than in the fashionable, light literary papers of the day. The other article is the one on "Fruit as Food;" it is a sensible article, and should be heeded. Fruit—so nutritious as well as delicious—furnished, by Providence, to our hand, like honey, all ready for use—its very best condition, ripe fruit, for our use, is just as it comes from the vine or bush, before we give it any other preparation. This article is regarded by too many as merely a dessert or delicacy, when it should be respected as real food, and of the best kind at that; and it ought to be as common and cheap as any other we eat. An acre or ten acres of fruit can be raised as cheaply as the same area of any other food, in proportion to the amount produced from the acre. And in our country there should be plenty for the millions, so that none would lack.

Then the articles on "Planting Trees," and also, "Early Vegetables," in the same number, strike me as really sensible, important, and deserving of the active attention of the readers of the RURAL PRESS. The growth of trees, properly cared for, is better than money at interest, or the profits of most business transactions—that is, the growth, in fair situations, is known to be 10 to 15 per cent. with many sorts of trees, besides all the other advantages. And when seasonably attended to, with proper care, and in liberal supply, good "gardens" supply a large and luxurious share of the sustenance of a farmer's family—generally more profitable than any other portion of his operations; and yet, too many farmers seem to regard the garden as of little or secondary account. To me, plenty of fresh asparagus, tomatoes, cauliflowers, celery, and salsify, are more esteemed and satisfactory, than all the purchased confections and delicacies that you can procure—whether to please the palate or promote health; and sweet corn, peas and beans, more acceptable than all the fat meats and wild game that the epicure could select. So, give me plenty of vegetables, throughout the year—both early and late.

And the fine cut, you present, on the first page, of "Montana Vegetables," pleased and interested me hugely; and should certainly be a matter of pride to the growers; and here I will volunteer the remark, that farmers, more generally, would find it to their account, if they would feed their stock more roots, in winter and spring time; carrots to cows, horses and sheep; turnips and beets to other stock; and for

hogs, and other fattening animals, boiled vegetables, as potatoes and others—as also their corn or meal.

But, a truce to this—I have already gone further than designed, when I sat down—which was, only to express the pleasure enjoyed in reading this number of the RURAL PRESS. If it is sufficiently patronized it ought to have a wide and elevated influence on the agriculturists and breeders of the Pacific Slope.

D. S. C.
Washington, D. C., Jan. 25, 1872.

The Cultivation of Almonds.

EDITORS PRESS:—This is the year to plant all kinds of trees. It is not too late—in 1862 I finished setting out ten acres of apple trees on the 29th of March, which did as well as any trees could do. In a wet year they do well put out late.

The Culture of Almonds.

Many inquiries come to me on this subject since the RURAL PRESS gave a notice of my orchard. I will answer them all through your columns.

Almonds, of the late blooming variety, will flourish in all parts of California where the peach does, and is not subject to the curl-leaf blight. A sandy soil, where the permanent water is, within four to fifteen feet of the surface is best, yet they will grow on mountain sides and mature the fruit.

Propagation.

They are grafted or budded on the peach or almond stock. The seed will not produce the same kind. To sprout the seed, lay down boards on the ground, cover with an inch of sand, spread on a layer of almonds, cover with sand, then another layer of almonds, then an inch of sand; keep them wet, and in three weeks of warm weather they burst open. Plant in drills one inch deep and put a light coat of rotten straw over them. Graft in February and bud in September or October. Trees will be cheap next year. They are best when put out in the dormant bud; large trees are stunted by transplanting.

Profits of Almond Culture.

One hundred trees may be put on an acre. At three years from the bud they will produce fruit; but not much. Corn or beans may be cultivated among the trees, leaving four feet about each tree. No weeds or grain should be allowed in an orchard. After giving shape to the top, very little pruning is required. After the third year simply cultivate the ground, and the almonds will pay. The use of the land is not lost while they are growing. If hogs and corn can be brought from Iowa and sold in San Francisco, it will pay to raise corn here. Growing corn protects the trees from the wind, and makes it grow tall and straight. After the third year the yield will increase very rapidly. At six years old \$500 per acre may be looked for.

Will the Business be Overdone.

The duty on almonds will pay for producing them here; hence Europe cannot compete with California in supplying the Eastern market; nor will the price decline much while they are imported. They are now worth more in New York than in San Francisco. The net profit of supplying the United States with almonds would be equal to one-fourth of the net profits arising from our wheat crop.

The population of the United States increases and draws nearer to us, so that there is no probability of fully supplying the demand. In a future article I will give the mode of bleaching almonds.

W. W. BRIER.

THE WING OF THE LOCUST.—If the tip of the wing of the so-called "seventeen-year locust," is placed under a low magnifying power, there will be seen near the fancied letter W (which has been observed by some with superstition) a beautiful branching, arborescent appearance, which is probably due to certain vessels which supply nutriment to the wing. The branches are transparent, and are based on one of the muscular bands of the wing. They appear to be filled with some granular material. Why they appear only at this one spot on the wing has not been explained.

AN UMBRELLA frame in process of manufacture has to pass through more than one hundred hands, and is the result of remarkably delicate and ingenious manipulations.

Cultivation of Currants.

One of the most neglected of our small fruits is the currant, and yet it is generally found to be the most profitable when properly cultivated. We never knew the market to be overstocked with this valuable fruit, either in this or any of the older States. In the East the currant is generally put into some corner of the garden or placed by the side of some fence, and the grass is almost always allowed to mat about the roots, while the bush itself is suffered to grow from year to year, with little or no pruning, until it dies out or becomes barren from sheer neglect.

In California it is managed a little better; it generally has its appropriate place here, and is cultivated much like other small fruit; but still much less attention is paid to its culture than its value as a market fruit warrants. It is easily cultivated, gathered and marketed. It is not a rapidly perishing berry, like most other small fruits, but can be kept long enough to carry it over any accidental and temporary over-supply of the market; and if not



THE RED DUTCH CURRANT.

wanted for the table, it can always be turned to profitable account by being converted into jelly, wine, etc.

The juice of the currant contains a peculiar acid, known as malic acid, to the presence of which is due its pleasant and refreshing taste.

The London Horticultural Society's Catalogue for 1842 gives a list of ten varieties of the red currant and three of the white. There are also several black varieties. The best known varieties are the Red Dutch, White Dutch, Cherry, Common Red, Red and White Grape, Fertile de Pallua, Black Naples and English.

We give herewith a figure of the Red Dutch, which is considered one of the best varieties. A well-known Eastern fruit-grower has claimed that he can get \$200 more from an acre of this than from any other variety. This is a rather wild statement, but shows the estimation in which it is held.

None of the small fruits return a more liberal reward for care and attention than the currant. It is a gross feeder, and to obtain the best returns should be grown in a rich, well-prepared soil, into which a goodly quantity of well-rotted manure should be thoroughly forked as often as every other year.

Several varieties at the East and in this

State have recently been introduced from France, which bear fruit of remarkable size and flavor, scarcely any difference being seen in the size of the first and last berry on the stem or raceme. Indeed, some of these are so large that they may be compared to miniature bunches of grapes. It is a gratifying fact that increased attention is being paid to currant culture in this State. Still there is much less danger of an overstocked market of this small fruit than any other grown.

Natural Gas Fountains.

It appears that in the State of New York alone there are three great belts of gas-bearing formations, each two hundred miles long, an average of ten broad and having a thickness estimated at one hundred feet. This would support three thousand wells, yielding gas equal in heating power to fourteen tons of anthracite daily, for one hundred years. Similar formations are found in Canada, Ohio and Pennsylvania, but perhaps the most important is the immense area of the Devonian and Silurian basins of the Great Lakes and the Mississippi Valley, where there are five, perhaps six, great beds of such rock.

Some of the gas wells give a most enormous quantity of gas. One on the Little Kanawha, nine hundred feet deep and four-inch bore, has a two-inch pipe leading from it a distance of a mile, where it feeds the furnaces of twenty-eight steam boilers of twelve-horse power each, besides fifty stores and a large number of jets for illumination. There is one in Ontario county, N. Y., 500 feet deep and five-inch bore, which gave a flame thirty feet high, the flow of gas being about five cubic feet per second, or upwards of 430,000 per day. The gas is nearly equal to six-horse power. At Venango, Pa., gas rises from wells under a pressure of two hundred pounds to the square inch, and instead of being burned under a boiler is run direct into engine cylinders in lieu of steam. At Erie, Pa., wells can be sunk for \$1,500 which will give gas enough, burned in the furnace of a steam generator, to produce 200 horse power.

American Wonders.

The greatest cataract in the world is the Falls of Niagara, where the water from the great upper lakes forms a river of three-quarters of a mile in width, and then, being suddenly contracted, plunges over the rocks in two columns, to the depth of one hundred and seventy feet.

The greatest cave in the world is the Mammoth Cave in Kentucky, where any one can make a voyage on the waters of a subterranean river, and catch fish without eyes.

The greatest river in the world is the Mississippi, 4,100 miles long.

The largest valley in the world is the valley of the Mississippi. It contains 500,000 square miles, and is one of the most fertile and profitable regions of the globe.

The largest lake in the world is Lake Superior, which is truly an inland sea, being four hundred and thirty miles long and one thousand feet deep.

The longest railroad in the world is the Pacific Railroad, which is over three thousand miles in length.

The greatest natural bridge in the world is the natural bridge over Cedar Creek, in Virginia. It extends across a chasm eighty feet in width and two hundred and fifty feet deep, at the bottom of which the creek flows.

The greatest mass of solid iron in the world is the great iron mountain in Missouri. It is three hundred and fifty feet high and two miles in circuit.

The largest deposits of anthracite coal in the world are in Pennsylvania, the mines of which supply the market with millions of tons annually, and appear to be inexhaustible.

LETTERS patent have recently been granted for the invention of an improved railroad car for the transportation of grain. By this invention the grain is discharged in from three to thirty minutes, a great saving in time over the present process. One man can attend to the unloading of ten cars, and discharge their contents as quickly as four men can unload one of the cars now used for grain.

USEFUL INFORMATION.

Removing the Odor of Carbolic Acid.

The value of carbolic acid for many applications is now well established, but for medical purposes is greatly diminished by the odor, which is extremely offensive to many persons. It may, therefore, be interesting to know of a method which will remove this odor, substituting for it a delicate trace of geranium leaves, which may, perhaps, be improved upon by adding a few drops of that oil. The process, as recently published, consists in pouring one pound of the best carbolic acid (the white crystallized) into two gallons of cold distilled water, taking care not to permit the whole of the acid to enter into solution. With a good sample, if, after shaking repeatedly at intervals, between two and three ounces of the acid remains at the bottom of the vessel used, this will be a sufficient residue to hold and contain all the impurities; with bad samples, less water must be used, and more acid. The watery solution is to be siphoned off, and filtered, if necessary, through fine filter-paper till perfectly clear. It is then placed in a tall cylinder, and pure powdered salt added, with constant agitation, till it no longer dissolves. On standing for a time, the greater part of the carbolic acid will be found floating as a yellow oily layer on the top of the saline liquor, and merely requires to be removed to be ready for use. As it contains five per cent. or more of water, it does not generally crystallize, but it may be made to do so by distilling it from a little lime. The portion collected, up to about 365° F., has, at ordinary temperatures, scarcely any odor save a faint one resembling that of geranium leaves. The addition of about four drops per fluid ounce of the French oil of geranium will still further mask the slight odor of the acid, and has an additional advantage of liquefying the pure crystallized product. The pure acid may be dissolved in 230 parts of water, and used as a gargle, or in 25 parts of water for painting the throat, or in 50 parts for the carbolic spray.

CLEARING BEAN OF INDIA.—Among other vegetable productions of India is a species of *Strychnos*, known there as the clearing nut, the dried seeds of which are used to a considerable extent for the purpose of clearing muddy water. For this purpose one of the nuts is usually rubbed hard for a short time round the inside of the earthen pot; the water afterwards is poured into it and left to settle, the impurities soon subsiding, and the water being left pure, clear, and wholesome. It is said the natives never drink well-water if they can get pond or river water, which they treat in the way indicated. These seeds have much the action of alum, but are believed to be less injurious, and are very easily obtained any where in India. The fruit when green, is made into preserves and eaten; but when ripe, and given in powder, answers the purpose of an emetic, a dose being about half a teaspoonful.

According to Dr. Pereira, the peculiar property of these seeds depends on the presence of albumen and caseine, which act as purifying agents, like those employed for wine or beer. If the seeds be sliced and digested in water, a thick mucilaginous liquor is obtained, which when boiled, yields a coagulum. A similar application is made elsewhere of other kinds of seeds. Thus the inhabitants of Cairo render the muddy water of the Nile quite clean by rubbing bitter almonds, prepared in a particular manner, on the inside of the earthen jar in which the water is kept. Might not this India bean be made a profitable and useful addition to our California products?

NORTHERN LIMIT OF THE OYSTER.—Oysters, it is stated, cannot be grown in the seas of the province of Quebec, the northern limit of the habitation of this shell-fish on the east coast of North America being Carraquette Bay, on the northeastern point of New Brunswick. Attempts have been made to plant oysters in Gaspé Bay, but the culture failed, in consequence of the extreme coldness of the water, which even in the summer is only a few degrees above the freezing point.

The oldest woolen cloth factory in the United States is probably that of Mr. Thaddeus Clapp, of Pittsfield, Massachusetts. This manufacturer has in his possession specimens of cloth of his own manufacture, selected from the production of each year from 1812 to the present time. Such a collection is obviously interesting to any one who is curious to observe the progress in the United States of the art of making woolen cloth.

Combining Scents.

The art of the perfumer is shown in delicately combining different scents. When we walk in a garden, the delicious odors that greet us are by no means the emanations of one flower. All the blooms of the garden, more or less, add to the general harmony that strikes so gratefully upon the olfactory nerves; they reach us in such infinitely small particles, that no one scent overpowers the other. When art attempts to imitate the diluting effect of the breeze, she has to be more circumspect. Only odors of a similar octave, as a recent writer has pointed out, will agree with each other. Another authority, indeed, has elaborated this idea, and has composed a perfect gamut of odors, beginning with civet, verbena, and citronella in the treble clef, and ending with the wallflower, vanilla, and patchouly in the bass clef.

Dealers, on the strength of their olfactory nerves, often make purchases amounting to thousands. The tea merchant, the tobacco dealer, or the hop merchant takes one sniff at the commodity in which he deals, and makes his purchase without fault. An experienced perfumer will have two hundred odors in his laboratory, and can distinguish every one by name. Could a musician, with an instrument of two hundred notes, distinguish and name every note struck without his seeing the instrument? Every person, from his own experience, can testify to another quality which scent in common with sound possesses; we allude to the power it has of recalling to the mind's eye the scenes of long past years. The mere breath of a perfume will often call up a picture of an event with all its minutiae, which had long lain dormant in our memory.

CURIOUS CUSTOMS.—An English paper says that among the curious local customs still practiced in Derbyshire is one which was kept up for 140 years at Hilton Hall. On the first day of the year the lord of the manor of Essington brought a goose to the hall, and drove it three times round the fire, after which he carried it to the table, and received a dish of it for his own use. This droll proceeding was only discontinued when the manors came under one lord. At Wellsall there is an annual adult scramble; for here a custom exists of throwing out apples and nuts from the Town Hall, on St. Clement's day, to be scrambled for by the people. Happy are the boys that are born in Wellsall! At Wichner, the same custom that has prevailed at Dunmow was once in use, and a wooden slice of bacon still hangs in the hall. In this case it was John of Gaunt who instituted the custom by arranging that the owner of the hall should hold the tenure in virtue of his keeping a fitch of bacon always ready for any married pair who had been married a year and a day and would take the following oath: "Hear ye Sir Philip de Somerville, Lord of Wychebor, mayentour and gyver of this baconne: I, A. B., sithe I have wedded my wife, and sithe I had her in my keeping and at my wylle by a year and a day after our marriage, I would not have changed for none other, fairer ni fouler, richer ni poorer, etc. And if the said B. were solo and I sole, I would take her to be my wyfe before all the wemen of the world. So help me God and all the fleshes!"

PREPARATION OF HIDES.—The following method is recommended for preparing leather: Begin by soaking the hide eight or nine days in water, then put it in lime; take it out, remove the hair by rubbing, and soak again in clear water until the lime is entirely out. Put one pound of alum to three of salt, dissolve in a vessel sufficiently large to hold the hide; soak the hide in it three or four days; take it out, let it get half dry, and then beat or rub until it becomes pliable. Leather prepared by this process will not do well for shoes, but answers for hamstrings, back-bands, and other purposes on the farm.

DARK ROOMS.—When a room is so situated that the windows admit but little light, as on a narrow lane or alley, their illuminating effect may be greatly increased by placing the panes flush with the outer face of the wall, and using glass which has been roughly ground on the outside. The particles of the glass are thus made to present innumerable faces in every direction, and the light thus gathered is transmitted to all parts of the room, whereas with the ordinary windows only so much light is obtained as is reflected from the opposite walls.

GOOD HEALTH.

The Effect of Light on Smallpox Pustules.

Among the many investigations now being made of the chemical action of light, there are none more interesting than those which are directed to the observation of its effects on the health. It has been observed by Dr. Webber that the sensibility of the skin is very much increased in those parts of the body which are always exposed to the light, and this difference has even been measured by that eminent physician. This remarkable fact is especially observable on persons suffering from smallpox, the severity of the skin disease being visibly augmented if the patient be not confined in a dark room. Dr. Waters has recently published a paper on this subject, in which he states that if the room be so darkened that not a single ray can enter it, the effect is to arrest the disease at the papular or vesicular stage; it never becomes purulent, and the skin between the vesicles is never inflamed or swollen; the *liquor sanguinis* is not changed into pus, nearly all the pain and itching are absent, and the smell is, if not entirely removed, greatly diminished. Another advantage, important in a therapeutical point of view, is the assistance given to medicines, the absence of light increasing the excretory powers of the skin.

CURE OF FLATULENCY.—A writer in the *English Mechanic*, in treating the not unimportant subject of flatulency, says that of this there are two kinds. In health the stomach and intestines always contain a moderate quantity of gas that is nearly pure nitrogen. This appears to be secreted by the mucous membrane of the stomach and intestines, and, in excessive amount, is one of the most troublesome kinds of flatulence. The other kind arises from fermentation or putrefactive changes of the food, and contains carbonic acid, and sometimes sulphureted hydrogen, as well as nitrogen. Both these forms of flatulency are best treated by using pure vegetable charcoal finely powdered—taken in the first case with each meal, and in the second as soon as the symptoms appear. The dose may be a teaspoonful, and its use should be continued for some time. This will usually correct constipation as well as looseness of the bowels, besides relieving the disease itself.

DECAY OF THE TEETH.—The acids which cause the decay of the teeth are conveyed in the secretions of the gums and the mucous membrane of the lips and cheeks; and the usual points of attack are in the interstices and the grooves in the facial walls of the teeth. The calculary nature of the saliva is antagonistic to the acids, and preserves the teeth from their dilapidating influence. Teeth are protected from this disease by the following conditions: Their regular shape and order, that the situations for the deposit of acid be as few as possible; the conservation of the teeth from noxious influences, by constant brushing; the healthy structure of the tooth itself, and of the mouth generally. Heider observed that the yellowish white teeth are less subject to the attacks of caries than those of a bluish shade, the enamel of the former being much harder; and the molars have been found to contain more mineral substance than the incisors.

AIR-CUSHION FOR THE FEET IN RAILWAY TRAVEL.—A writer in the *Medical Times and Gazette* refers to the fatigue of the limbs produced after a long railway journey as due mainly to the trembling motion of the floor under the feet, and states that, having suffered considerably from this cause, he was induced to try the experiment of using the well known air-cushion as a foot-stool. This answered so well, that he has never traveled without using one in this way, and has found the effect to be a remarkable improvement.

COLD CREAM.—"B. L." of Sacramento, Cal., sends to the *Druggists' Circular* the following formula for making cold cream, which he thinks superior to anything heretofore published: Oil of almonds, (English) 8 oz.; white wax, 1 oz.; spermaceti, 1 oz.; rose water, 6 oz. Put the oil, the wax and spermaceti with 4 oz. of the rose water in a porcelain dish; heat over a water bath till all is melted. Transfer to a suitable mortar, and beat constantly till quite cold; then add the balance of the rose water by small portions, and beat at least ½ hour longer. If rose water is not convenient, use pure water instead, and add 2 drops of oil of roses immediately after the last portions of the cold water.

Keep in well closed jars. The selection of the oil of almonds is most important, procure the best English oil, and beware of the so-called French oil of almonds; this is imported here under its real name—poppy seed oil, and baptised on its arrival "French oil of almonds."

THE AGRICULTURE OF THE MORMONS.—Our people wonder much that the Mormons have been able to build a city and find subsistence for their thousands of people in such a region, but when we learn the qualities of the soil around them, and the nearness and abundance of mountain springs, the wonder ceases. The labor needed to make their lands fruitful bears no comparison to that the New England settlers had to expend in order to prepare a place suitable for their crops; and while their soil still retains its rich properties, with no apparent exhaustion, ours has to be replenished with foreign material every year. They find the earth about them already loose, level and rich; they pour water over them and their vegetables grow abundantly, and fruit trees are weighed down with their burdens. It is true that they have to dig long ditches and to construct long sluice ways from the slopes of the hills above them, but this is all. There are no forest trees to be felled, no stumps to dig up, no rocks to remove, no deep plowing to be done, and no chemical fertilizers to be added, before they can reap rich returns from field and garden. They simply knew twenty years ago what the rest of the American people are just discovering, that the greater part of our Central desert is in reality no desert at all, but the richest meadow land minus one property—water. And water seems to be the only want of the world after we pass the Nebraska plains. Where brooks and rivers flow, man can live at his ease, where these are wanting he forsakes the land, sets to work, like the patient Mormons, to lead down the melting snows of neighboring mountains to water his crops during the rainless midsummer days.—*Cor. Boston Journal.*

A CHICORY MANUFACTORY.—Messrs. Mein & Raab are preparing to establish a chicory manufactory in this city. Mr. Mein is a practical manufacturer of the article, and has had much experience in the business in some of the most extensive manufacturing establishments in Prussia. The experiment has been tried by these gentlemen, at a point on the San Joaquin river a few miles from this city, but unfortunately just about the time the machinery was put in successful operation and all the necessary apparatus in working order, the factory was destroyed by fire. They propose to manufacture chicory on quite an extensive scale the coming summer, and with that end in view have entered into contract with several farmers to supply the green chicory. It is expected that not less than two hundred and fifty acres of land bordering on the San Joaquin and Calaveras rivers will be cropped with chicory the present year, and it is estimated that the yield will range from fifteen to thirty tons per acre. The yield last year on some land near the San Joaquin river averaged the latter amount. Fifteen dollars per ton is, we understand, the price paid by the manufacturers for the green article. Samples of the quality manufactured by the gentlemen named have been sent to merchants in New York, Chicago, St. Louis and other large cities in the East for inspection, and the uniform verdict of dealers is that it is far superior in quality to that imported from Prussia, Holland and other eastern countries. The quantity of chicory consumed annually in the United States is enormous, and the demand is almost wholly supplied from abroad. It is probable that not less than a thousand tons will be manufactured by Mein & Raab during the coming summer. *Stockton Independent.*

DEPOSIT OF MINERAL PAINT.—Our attention, says the *Indiana Democrat*, has been called to the wonderful productions of sienna or mineral paint, found in large quantities upon the farm of John Cessna, in Banks Township, in this county. This paint comes from a bank of rocks on Straight's Run, and is deposited in large quantities in a dam. It has been pronounced by competent judges a superior article, really better than the sienna imported from France and Italy, for the reason that it is entirely without grit. According to the definitions, it is a silicate of iron, and is also called *terra sienna*. It is estimated that the deposit is inexhaustible, hundreds of thousands of tons being exposed; and this is increased every day by the quantities which flow from the rocks.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, March 9, 1872.

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Drying Raisins.

EDITORS PRESS.—I inadvertently forgot to mention that the grapes were turned but once, when about half dried, and were covered at night with a piece of thin muslin, with one end tacked to a stick—the other end to one end of the scaffold so as to roll it up in the morning and unroll it in the evening, otherwise the dew would darken them and they would be longer in curing. In valleys where there is no dew, I don't think it would be necessary.

H. W. CRABB.

Oakville, Feb., 20, 1872.

By reference to page 104, present volume, the grape grower can see what a very simple matter it is to make excellent raisins, with the right kind of grape.

Catalogues Received.

E. E. MOORE.—Beautifully illustrated catalogue of choice flower seeds, bulbs and plants. Also a list of new gladioli, fuchsias, roses, colons, shrubs, conifers, etc., for 1872; 425 Washington street, San Francisco.

W. C. HAMPTON'S voluminous catalogue of trees, shrubs, evergreens, green-house and hardy plants, for 1871-72. Mt. Victory, Ohio.

ELLWANGER & BABY.—Descriptive catalogue of ornamental trees, shrubs, roses and flowering plants. Also their descriptive catalogue of fruits, and wholesale catalogue. Mount Hope Nurseries, Rochester, N. Y.

OLM BROTHERS.—Illustrated catalogue for 1872 and descriptive catalogue of dahlias, verbenas, phloxes, etc., and summer flowering bulbs. Floricultural Gardens, 350 South Main street, Springfield, Mass.

GYPSUM.—At Grand Rapids, Michigan, where there are immense deposits of gypsum, it requires ten railroad cars a day, to convey from that place, the quantity required by farmers as a fertilizer.

PACIFIC JOURNAL OF HEALTH.—The March number of this excellent monthly has been received.

Wheat Worms.

For many years subsequent to the American Revolution, there was a popular belief amongst Eastern farmers that the destructive wheat insect known as the "Hessian fly," had been in some way, imported by the Hessian troops. Be this as it may, the fly for a certain period of years, was a perpetual scourge to the crops, as every old farmer in the Atlantic States can attest. The way in which the fly wrought mischief to the growing wheat was by depositing its eggs in the stalk between the first and second joints. After the eggs were hatched, the larvae fed upon the juices of the plant and completely checked its growth and development. This fly usually attacked the grain sown upon the uplands and in light soils, but rarely appeared upon the rich loam of the valleys. By some unexplained law, the incursions of predatory insect swarms, like the growth and development of certain kinds of plants, are limited in duration, and if not entirely checked, become comparatively harmless and give place to some other devastating creatures. For many years past but little complaint has been heard about the Hessian fly, but at intervals during the past forty years, farmers in the East have been terror stricken by the advent of the dreadful "Army Worms." This liveliest, most voracious and most destructive of all wheat grubs, like Jonas's gourds, seem to spring from the earth fully developed in a single night, and in countless billions start forth on their tour of destruction. As the name indicates, these worms move in one direction in a solid column like a vast army. Nothing but destruction can check their onward course, and they not only lay waste the grain fields, but devour almost every green plant which falls in their way, so that the country in their wake appears like a barren desert. Like the Hessian fly, these "run a muck" through the land for a term of years and finally fail to make their appearance.

Within the past thirty years the land bordering on the Ohio and Mississippi rivers has been frequently laid waste by devouring swarms of

Caterpillars.

These little pests not only destroy grain-fields and orchards, but attack the forests, stripping the leaves from the trees like a blighting frost. In 1837 vast bodies of oak and sugar maple trees in Kentucky and Indiana, were killed outright by having their young leaves stripped off by caterpillars.

Grasshoppers.

Or California locusts are another scourge to the land, especially so in Utah and on the Pacific coast. In Desert they fly sometimes in swarms so that they literally darken the sun, and woe to the growing grain where these animated clouds touch the earth. In California our wheat growers have for many years suffered from the ravages of what are commonly known as

Wire Worms.

This is a species of grub something like the corn grub, or cutworm of the East, but is more active in its movements and confines its depredations chiefly to young wheat and barley plants. In certain localities they are so numerous that whole fields have been cut down by them in an incredibly short period. The wire worm is about to be superseded by a still more formidable wheat worm. This new type of grub resembles the caterpillar somewhat, in that it is covered with a coat of fuzzy hairs. It is usually one inch in length, is of a deep brown color, sluggish in movement and remains almost continuously under ground. For lack of a better name our farmers call it the

Ground Cutworm.

The peculiarity in this grub is that it preys upon kernels of wheat and destroys the plant in the very germ. They usually abound in fallow land, rarely appearing in soil which is plowed annually. The ground worm threatens to become a formidable enemy. Already in the vicinity of Evergreen and in other portions of this county, these worms have devoured the grain to such an extent that farmers have had to re-sow their fields. Cannot science devise some plan for the destruction of these pestiferous insect swarms which in some shape or other are perpetually annoying the husbandman and devastating the land? Surely there is some chemical preparation which if sown broadcast with the grain would either kill or drive out the insects. By actual experience we

know that saturating the seed in sulphate of copper, will, to a great extent, prevent smut in wheat, and it is to be hoped that some similar process may be discovered which will protect the young crop from grubs and ground worms. As a starter in the way of simple experiment, several farmers in this vicinity have sown dry table salt with their wheat, with the hope that it may drive out the ground worms. As we have said, the experiment is simple, but it may prove efficacious and we shall anxiously await the result. Will not some of your learned men give the grub-worm question some attention?

QUERCUS VIRENS.

Santa Clara Co.

Grafting Fruit Trees.

As the proper season has arrived for grafting orchard trees, we propose to give our farmers' oldest boy a little plain talk on the subject, because they are the ones who should do all the farm grafting. We say orchard trees, because the nurseryman who practices his skill generally on seedling stocks, does it any time during the winter; his scions being on hand and his seedlings and their roots having been taken from the ground in Autumn or early winter and "heeled-in," usually in a cellar, or out-house where the weather is not freezing. Then whenever he has leisure, by daytime or evening, practices the method known as whip-grafting, the stock and the scion being always of nearly equal size or diameter.

As this method of grafting can be used to advantage on the tops of small trees, and very expeditiously, we will give it also. Cut off the limb where it is the same size as the scion, with a smooth scarf a little more than an inch in length; then at one-third the length of the scarf from the end, insert your knife and press it in another one-third the length of the scarf, and nearly with the grain of the wood, forming a thin wedge or tongue; now prepare the butt of your scion in the same manner as the stock, having two or three buds above the scarf, and insert it in the stock crowding the two together till the union is quite perfect, and see that the liber or inner bark of the two come together, at east upon one side. Now wind with a strip of waxed cloth, and success is certain.

Our illustration will give you an exact idea of stock and scion before being pressed together.

Orchard grafting is usually done upon old trees, or limbs too large to admit of whip grafting. It is called cleft grafting, because the stock is split and the scion inserted in the cleft. The stock is sawed off smoothly and without tearing or injuring the bark of that portion grafted upon. A strong knife is now laid upon the center of the stock and with a small hammer or mallet is driven down till the stock splits, the knife is then pressed over first to one side and the other to cause the bark to separate or split more smoothly than if not thus cut.

A small wedge of hard wood or iron, is now driven down in the center of the stock, till it opens sufficiently to receive the scion, which is prepared for insertion by a double scarf, making it wedge-shaped and of such slope as to fit as near as possible the cleft; the outer edge being the least trifle thicker than the other to insure its contact with the stock at that point, a scion must be fitted for each side of the stock. Insert them, being careful that the inner bark of the stock next the wood and the same of the scion are brought together in direct line as possible for their whole length.

Now remove the wedge and the drawing together of the cleft holds the scions in place. Cover with waxed cloth as in whip-grafting. Our illustration gives the appearance before the waxed cloth is applied.

This method is practiced upon stocks of any size that will split freely, and best done before April, or before the bark peels freely. There is another method called crown-grafting, practiced upon stocks that are too large to be easily split.

This permits of grafting very late in the season, even after the trees are in bloom, and depends upon the bark peeling freely, the scion

being inserted between the bark and the wood of the stock, without the latter being split.

By this method three or more scions can be inserted on a single large stock. The form of the scions before insertion and after being set are shown in the illustration. Bind with waxed cloth as in cleft grafting; this is important by this method of grafting, for until the new growth has begun to knit the two together the scion is not held as firmly as in cleft grafting.

Now throw aside everything like an idea of mystery, that quack grafters delight in throwing around the process; procure a good knife or two, for splitting the stocks, and another smaller and keen cutting one for preparing the scions, two sizes of wedges, a roll of waxed cloth, a convenient step ladder, and a small mallet and saw, go right into your orchard and in two years change every tree of common and unsalable fruit to one bearing the best. In grafting and changing the whole top of a large tree always commence at the top and work downward around the outside; in this way you will not be breaking out, in sawing off the limbs, the scions you have already set.

Small Fruits.

A patron of the RURAL, writing from Chico, Cal., who is employing his leisure moments in the cultivation of a limited spot of ground, partly for the pleasure it affords him and partly with a view of some time enjoying the luxuries of luscious fruits, writes us, that he has heard it is difficult to raise the early small fruits, and particularly currants, anywhere in the valley in the vicinity of Chico; and would like to know the reason, if it is really so, and the remedy, if such be known by any of our patrons.

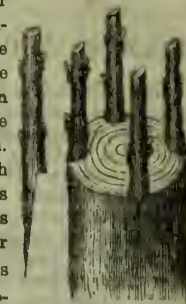
In many places in California the currant seems to be a shy bearer, and particularly in the dry, arid plains of our great valleys, exposed to an almost tropical sun. It is a native of Northern Europe, but has proven wonderfully prolific of fruit in many parts of the United States, and particularly the Canadas. At an elevation of 3,000 feet, upon the lower Sierras, in all the little valleys where tried, it has proven very prolific and producing fruit of large size. Doubtless higher up till we reach the region of wild currants and gooseberries, would be better still.

Excellent currants, however, are grown in San José valley, and in the vicinity of Oakland and Alameda, and even along the banks of the Sacramento and San Joaquin rivers. If our enquirer's soil is comparatively high and dry upland, spade deep, at least 15 inches; pulverize perfectly; use none but the best rotted manure and that finely pulverized and intimately mixed with the soil; set your cuttings or rooted plants, before they begin to leave out; keep the ground moist but not soaking wet, till your cuttings have taken root; and at all times keep the ground perfectly free from weeds; and if your bushes have a partial protection from the sun during the middle of the day by being set on the north side of a building or high board fence, you can be quite sure of a fair yield of this very desirable summer fruit.

RIPE APPLES.—A citizen of San Diego last week picked from a tree in his garden thirty-two ripe apples. The tree blossomed at the beginning of November, and the fruit kept growing during the winter as nicely as it does in other climes in the summer time. That the apples are good is vouched for by all who tasted some of the "apple sass" made from them.

A little too indefinite. We would like to know the variety of apple that ripens in three months and a half from the blossom, in the winter season at San Diego or any where else. Why make them into "sass," if good ripe apples? That all (?) who tasted them, thought them good, we have no doubt.

LIKES THE RURAL.—It is wonderful how a very few sensible words will sometimes convey a great deal of meaning and truth. A subscriber in Cordelia, Solano county, J. E. T., says:—"My subscription has run out; I cannot get along without your paper, though I am only farming on a small scale. Everybody here is pleased with the PRESS." Here is your money.



Cork Oak and Chinchona.

EDITORS PRESS:—Being a constant reader of your valuable paper, and, believing you feel a deep interest in the introduction of any plants, etc., that will be a benefit to the State, has induced me to ask your aid, or of you information, as to the best means to obtain a lot of acorns from the cork oak. Can you tell me which is the best county to get them from, and if there is any one in San Francisco through whom they can be ordered. I have every reason to believe that the climate of this State is well adapted to them, at any rate I am willing to make the experiment, if I can get some acorns to do so.

While on this subject will you give me what information you can about the Calisaya or Peruvian bark tree. Can it be propagated from seed? Is the climate of this State adapted to its growth, etc? I have a deep interest in tree planting in our State, and particularly the introduction of anything new that will be valuable. Legislation may do much in the furtherance of this object, but its success rests wholly with the people.

An answer to the above will be gratefully acknowledged. J. W.

Watsonville, Feb. 24, 1872.

We have made inquiry and can find no acorns of the cork oak of recent importation in San Francisco. They can be procured from France, through the house of S. W. Moore & Co., seedsmen of this city. The cork oak will perfect its seeds in England, but it is indigenous to more southern latitudes. In the south of France, along the base of the Pyrenees, there are valuable forests or orchards of this tree; but it is in Spain where they probably attain to the highest perfection in growth, being often seen with a height of 60 feet and four feet or more in diameter.

The tree in favorable soils and climate grows rapidly. The bark for cork making is seldom stripped from the tree before it attains the age of fifteen years.

In 1859 the Agricultural Department at Washington procured and distributed a large quantity of genuine Spanish cork oak acorns. A correspondent in Wayne county, Mississippi, planted a lot of these acorns, they all came up, and he reports that at the close of 1869, just ten years, they had attained a height of about 13 feet, with a trunk of eleven inches diameter; and says his soil was not well adapted to their growth.

Of this importation Mr. E. Dresel of Sonoma, succeeded in growing about 80, but how they have flourished since that time we are not informed.

Chinchona Calisaya.

This is one of the most valuable of the many varieties of trees yielding quinia, commonly known as the Peruvian bark tree. That many localities in California are adapted to its growth there can be no doubt; but it would be well to know, before incurring large expense in procuring seed from the counties where indigenous, a few facts connected with its habit of growth, as effecting its medicinal properties.

The best trees or rather shrubs, grow at an elevation of 6,000 feet, producing a bark much thicker and stronger in quinine, than those grown at 5,000 feet. Indeed with all the different varieties, it is found that the higher the elevation the thicker and stronger the bark. There are varieties as the Chinchona nitida, and C. micrantha, that will flourish at 2,000 feet elevation, but not under this. All the Chinchonas are raised easily from seeds, which can be obtained from almost any port in South America having direct communication with the Andes, as they are found over a vast extent of those mountains. They are also propagated with great facility from cuttings, from young and well established trees.

Dr. Logan of Sacramento, who has given more thought to the introduction of the Chinchona to California than probably any other person, is of the opinion that immediately below the Sequoia or Big-tree region and in that part of the State, a climate might be found with conditions that would support the successful growth of the Chinchona.

FIRE.—A fire occurred in the tunnel of the San Fernando Oil Springs, in Los Angeles Co., on the 1st inst., where two men were quite badly burned. This is the third time the gas has ignited in the tunnel since work has been resumed at the springs.

GRAVES' INCUBATOR.—The address of the agent of this patent egg-hatching invention, is wanted by one or more of the patrons of the RURAL PRESS.

California Beets.

California has a world-wide reputation for the size and superior quality of its vegetable products, and particularly is it famous for its enormous beets; perfectly colossal in size, and with a soil and climate so admirably adapted to their development, that it is nothing unusual to grow as many as 40 or 50 tons to the acre. Indeed, there are instances in which committees of State fairs, have been called upon to accurately weigh the product of a single acre, and the result has shown as many as 56 tons of sugar beets, and in one instance 67 tons of mangel wurzel beets were grown to the acre.

There is probably no other root crop so valuable for the feeding of animals as the mangel wurzel, or field beets. Rich in sugar, though in this respect alone, not equal to the sugar beet, but containing also a large per cent. of albumen, gluten and starch, all of which are highly nutritious, and some of them as the sugar and starch, possessing the fattening quality. The illustration we here present is from a correct drawing from a mangel wurzel



beet raised in Santa Clara Valley, and on exhibition at the seed and plant depot of E. E. Moore, seedsmen, nurseryman and florist, 425 Washington street, San Francisco.

It is of the long red variety, the prevailing characteristics of which are, that it usually stands from one-half to two-thirds of its height out of the ground; its color a light red; flesh, usually white, but sometimes rose colored; leaves, dark green veined with red. The specimen here pictured, would appear, to any one but a Californian, as a curiosity, or perhaps, a monstrosity, on account of its enormous panicles, which are covered with leaves while growing and present the appearance of a number of good sized beets, for any other country than California, growing out of the top of some nondescript vegetable monster that was trying to imitate some turreted castle of the older time.

The weight of this beet when pulled was 112 pounds, the growth of a single season. We say this because beets in California are frequently grown as curiosities for two and even three years without removing them from the ground and without decay; the seed stalks being constantly cut out as they make their appearance from week to week. In this way beets have been raised that were over 300 pounds weight; but after the first season's growth they become hard, tough and fibrous, more like the trunk of a tree than an edible root.

We have also been kindly furnished by L. Ross & Son with a photograph of another beet

of the same variety, on exhibition at their fruit store in San José, grown the last summer, and weighing 170 pounds; but it is not quite so fair a specimen of vegetable as the one we here present.

It has been observed by growers of beets in our climate, that the seed obtained fresh from Europe, will produce fairer beets, and that it is only after the seed has been reproduced here, for two or three years and sown, that the large, tufted panicles, shown in our engraving are produced. We would not, however, convey the impression that all big beets are thus turreted or crowned, even from California-grown seed; but the tendency seems to be, with our climate, to change annuals of other countries to biennials and even to perennials; not only vegetables, but many plants and trees assume this habit, and some that are only bushes in the Atlantic States—as the elder and morus multi-caulis, here grow to the height of, and with the spread of trees.

The Proposed New Land Policy.

The new land policy, as shadowed forth by the bills lately introduced by Assemblyman Barker, ought to meet the approval of every sincere friend of the industrial and commercial interests of the Pacific Coast. These bills provide briefly as follows;

First, we have a Joint Resolution asking Congress to resume public lands in California for actual settlers only, under the homestead and pre-emption laws. The effect of that action by Congress would be to stop the wholesale entries of lands and concentration of whole townships in speculative hands—a policy discouraging to immigration and the material development of the State.

Next we have an Act reserving all lands belonging to this State for settlers only—a measure like the one asked from Congress, and intended to place a check upon the wholesale absorption by speculators of State, School and Swamplands.

Then comes an act requiring parties who have bought State lands on credit, and who are not actually living upon and cultivating the same, to pay over to the State the balance due within a certain time on pain of forfeiture. The law under which such sales were originally made authorizes this special legislation.

The fourth and last bill, introduced by Mr. Barker, provides that copies of maps and records of State and United States lands, now lying open to pre-emption, or unimproved and not paid for, shall be furnished to all County Recorders, for the benefit of the people at large, together with any other attainable information which may become the means of guiding settlers to the selection of desirable land for improvement.

This last bill is a very important matter to the settler, who has neither the time or experience in such matters to properly inform himself, or the means to employ attorneys to do that which the sellers, (in this case, State or National Government) under other circumstances, always do to effect a sale of their property. These bills, together, present a land policy which must commend itself to every well-meaning citizen, who has the welfare of the State at heart, or who is willing to unite in any proper effort to discourage unwholesome land monopolies, and thereby encourage that class of immigration which the State most needs.

Grasses for Embankments.

EDITORS PRESS:—Will you oblige me with the information of what kind of grass would be most suitable for sowing on the inside bank of a mill reservoir to prevent the dirt crumbling in as the water is drawn off. H. B. P.

San Luis Obispo, Feb. 26, 1872.

None of the cultivated grasses of which seed can be procured, will grow and form a permanent sod or covering for an embankment, under water; or where it is for half the time under water, alternating every day or every two or three days. There are, however, besides tules, several of the wild grasses and the rush, that will grow close to the waters edge, extending their roots into the earth far below the surface of the water, but not so near the surface of the earth embankment, as to offer the protection our correspondent desires. Sods or tufts of the wild grasses that form the bogs or tussocks of low, marshy grounds, if transplanted to the line of high water, would soon form all the protection that can be afforded by any of the common grasses.

In Northern Michigan we have seen the *Zizania aquatica* or wild rice of the northwest used for the very purpose desired in this instance, as it grows in water of any depth from two inches to six feet, and forms a thick matted covering of roots and stalks over the whole surface of the earth under water.

Goat Growers' Convention.

Pursuant to notice a meeting of the goat growers of California was held in Agricultural Hall, in the city of Sacramento, Feb. 28, 1872, for the purpose of organizing a society of breeders of Angora or Cashmere goats. The meeting was called to order at 1 o'clock P.M. by N. Gilmore of Eldorado County, who briefly stated the object of the association, whereupon Thomas Butterfield of Monterey County was chosen temporary chairman, and N. Gilmore, Secretary.

On motion the Chairman appointed the following committees: On permanent organization, by-laws, rules and regulations, S. A. Rendall, D. S. McClellan and A. J. Webster. On breeding, condition, etc., of Angora goats on the Pacific Coast, N. Gilmore, L. A. Upson and W. J. Prosser. The meeting then adjourned till 7½ o'clock P.M., at the same place.

Evening Session.

The Society met pursuant to adjournment, Butterfield in the chair.

The Committee on Permanent Organization presented "Rules and Regulations of the Angora or Cashmere Goat Association," which were read.

Election of Officers and other Business.

An election of officers was then held resulting as follows: For President, Thomas Butterfield; Secretary, Nathan Gilmore; Treasurer, L. A. Upson.

W. J. Prosser offered the following resolution, which was adopted:

Resolved, That the Secretary be requested to forward a printed circular containing proper instructions to each member of the society, requesting him to return to him the number of pure blood and different grade goats in his possession, and from whom the original stock was procured; which returns the Secretary shall record in a book kept for that purpose, such book being accessible to all members of the association, and present at all stated meetings of the society.

Memorial to the Legislature.

Upon motion the President and Secretary were requested to wait upon both bodies of the Legislature in behalf of this Society, and present a memorial.

This memorial will doubtless be accompanied by a bill, asking for assistance from the State, in the shape of premiums for articles and fabrics manufactured from the wool or hair of the Cashmere goat; which, if obtained, will be a sufficient stimulus to cause the immediate erection of the necessary works for its manufacture in California.

Members.

The following named gentlemen were enrolled as members: Thomas Butterfield, Hollister, Monterey county; S. A. Rendall, Santa Rosa, Sonoma county; D. S. McClellan, San Mateo county; A. J. Webster, Colfax, Placer county; W. J. Prosser, Rocklin, Placer county; Mason Wilson, Vacaville, Napa county; N. Gilmore, El Dorado, El Dorado county; R. M. Shackelford, Solidad, Monterey county; J. P. Sargent, Gilroy, Santa Clara county; Dr. Thomas Flint, San Juan, Monterey county; E. D. Shirland, Auburn, Placer county; Dr. F. E. Bailey, Santa Cruz, Santa Cruz county; L. A. Upson, Sacramento, Sacramento county; George C. Perkins, Oroville, Butte county; George S. Wilson, Drytown, Amador county.

Cause of Cattle Disease.

EDITORS PRESS:—I notice in your issue of the 17th ult. in the report of the Santa Cruz Farmers' Club, that the cattle disease prevailing in some parts of the State, is believed to be caused by the cattle being allowed to feed among hogs.

Allow me to say that I believe they have hit the case just right, for I am positive of one thing in regard to another kind of stock feeding with hogs, which is this: In nearly every case where I have seen young colts kept in a barnyard with hogs many of the colts have died.

Now, if running or feeding with hogs causes the death of colts in almost every case, and I have also been informed, by a celebrated farrier in Iowa, that it does, I don't know why it should not have a similar effect upon cattle.

D. C.

Watsonville, Feb. 20, 1872.

TABLED.—The monthly report of the Department of Agriculture, Washington, for January, 1872.

An Address to the agricultural organizations in the United States. Prepared by a committee of the National Agricultural Association; together with Constitution and proceedings. Nashville, Tenn.

An Address to the Legislature of California on the mortgage tax question, "Shall money and mortgages be taxed?"

The Pacific Medical and Surgical Journal for March, 1872.



We doubt not that some of our readers will be carried back in memory to the old-fashioned church and the old-fashioned Sabbath of their younger days by the following graphic little poem:

The Old-Fashioned Choir.

BY D. F. TAYLOR.

I have fancied, sometimes, the Bethel-bent beam
That trembled to earth in the patriarch's dream,
Was a ladder of song in the wilderness rest,
From the pillar of stone to the blue of the west,
And the angels descending to dwell with us here,
"Old Hundred," and "Corinth," and "China," and
"Mear."

All the hearts are not dead, not under the sod,
That those breaths can blow open to Heaven and God!
Ah, "Silver Street" leads by a bright, golden road—
O, it is not the hyans that in harmony flowed—
But those sweet human psalms in the old-fashioned
choir

To the girls that sang alto, the girls that sang air!
"Let us sing to his praise," the minister said,
All the psalm-books at once fluttered open at "York;"
Signed their dotted wings in the words that he read,
While the leader leaped into the tune just shed,
And politely picked out the key-note with a fork,
At the heels of the girls in the rear of the song
I need not a wing—bid no gentils come;
With a wonderful web from Arabian loom,
When the world was in rhythm, and life was its rhyme;
Where the streams of the year flowed up noiseless and
barrow,

That across there floated the song of a sparrow;
For a sprig of green on away carries me there,
To the old village church and the old village choir.
When clear of the floor my feet slowly swung,
And timed the sweet praise of the song as they sung,
Till the glory slant of the afternoon sun
Seemed the rafters of gold in God's temple begun!
You may smile at the nasals of old Deacon Brown,
Who followed by scent till he ran the tune down:
And the dear sister Green, with more goodness than
grace,

Rose and fell on the tunes as she stood in her place,
And where "Coronation" exultingly flows,
Tried to reach the high notes on the tips of her toes!
To the land of the lost they went with their song,
Where the choir and the chorus together belong,
O, be lifted, ye gates! Let me hear them again—
Blessed song, blessed Sabbath, forever amen!

Chit Chat.

BY SALLIE OF THE PLAINS.

Or "plain Sallie," just as you like, dear reader of the PRESS. I wonder if you all like it as well as I do. I never take it up that I do not find something that does my heart good, and to the writer of which I feel like saying "that's so, I agree with you heartily." I trust you all read "Farm House Chit Chat" in the RURAL of Feb. 3d, and were no doubt as delighted with it as I was. I think friend "Mary" must be a Yankee from away "down East," perchance from the "Little Nutmeg State," like myself; if so, I would like to give her the right hand of fellowship. I glory in the appellation of "Yankee" and also in the fact of being a *farmer's* wife, not a "rancher's" wife. We have pitched our tent but recently out here on the broad plains of San Joaquin valley. We are yet *verdant* in California life, and have provoked the sneers of some of our neighbors by being content to settle on a *quarter* only, but it is our intention to remain and make a *home* here. When we see what "live Yankees" can do on a quarter, time enough then to cast our eyes about us upon the neighboring quarters, and extend our domain, until we reign supreme over a section. We are but *two*, and our cottage contains three cozy rooms, enough for ourselves, and the "angel unawares" who may light upon us. The Tuolumne glides peacefully along, but a short distance from us. Our vegetable garden is enclosed at the south side of our cottage and gives promise of many a green thing for our table ere long. Oh, how I wish every poor, over-taxed wife, whose husband owns many acres of soil, could be made the happy "queen" over a small realm well tilled, and a little home well filled with comforts. I am sure her "lord" would find her far oftener well willed. Oh ye plain "Hezekiah's," and really kind hearted "Josiah's," be not unmindful of the faithful plodder at your side, but just as soon as in your power, set to work and tear down the old shanty with its numberless and useless hovels, and begin a house that your wife will be proud to call home, and give her a kitchen just as near our friend Mary's plan as your means will allow. Surround your house with flowers and give your wife help in cultivating them. May her eyes feast upon fine, sleek horses, not a score of them, but just so many as can be kept fine

and sleek. May her chickens be of the very best breed, and kept so well fed that they will not be forever hungry after her choicest plants; and pigs! keep them where they belong, and so fat, they could not walk as far as the garden, to cultivate it with their snouts, even if it were not fenced. May the day not be far distant, my burdened, hard-worked sisters, when these and many more comforts, shall surround your quiet peaceful homes, even in this grand old San Joaquin valley.

An Indian's Temperance Sermon.

Walk-Under-the-Ground came to the cavalry camp, and, entering an officer's tent, began to converse with him. The chief asked him for a drink of whisky, and was given one; presently he asked for another, when the officer, knowing the Indian's failing, promptly refused to let him have any more. Walk-Under-the-Ground soon became grossly insolent and abusive, and so enraged the officer that he rose from his chair and kicked the old fellow out of his tent. On his trying to re-enter, the officer drew his sabre and turning the flat of the blade, caught the chief and gave him a tremendous thrashing. The insulted Indian went at once to Spotted Tail's camp and related what had happened, asking him in conclusion, if such outrages were to be calmly borne. The old chief replied that he was sorry for the ill-treatment his lieutenant had received, and the affair was most unfortunate, but as Walk-Under-the-Ground admitted he had grossly insulted the officer, he had no one to blame but himself for the unhappy manner in which the visit to the cavalry camp had terminated. As Walk-Under-the-Ground had expected much sympathy from his chief, he was enraged at this decision and began to abuse Spotted Tail.

The chief calmly replied: "When I go to see the white soldiers I do not drink their fire-water, and they treat me kindly and invite me to eat. When you go to the camp you get drunk and become insolent. If you had behaved yourself in a proper and respectful manner you would have had nothing to complain of from them; but as you got drunk and involved yourself in a quarrel, you should not come here to make it a matter of complaint to me. You are a troublesome old man, and when you are drunk you have no sense left in your body. Because you got the worst of it in a row of your own making, is no reason why I should sympathize with you or bring your disgraceful conduct before the council. You have more than once occupied the time with trifling and vexatious questions, and it is not proper that you should do so again. Go home, keep a civil tongue in your head; let fire-water alone and your trouble will cease."

On hearing this plain language from his chief, Walk-Under-the-Ground became greatly offended, and upbraided him with caring more to please the whites than his own people. "You are," said the chief, "willing to be kicked and cuffed about by the whites; but I am not, and I will fight them. Once you were a brave warrior, and cared for your tribe; now you have become old and feeble—you are the friend of the whites, and you are no longer a warrior, but a woman." Unable longer to endure such treasonable and insolent language, the old chief sprang upon his rebellious subordinate, and before any one could interfere, plunged a butcher-knife seven times into his side and breast. Walk-Under-the-Ground sank down at the feet of his chief and almost immediately died. As soon as he was dead Spotted Tail ordered the body to be pitched out of the lodge, and summoned the Brule chiefs, related to them what had happened, and ended by naming one of them to succeed the dead man as chief of the Brules. All the other chiefs at once gave in their allegiance to the new chief, and no one ventured to remonstrate or complain of the killing of Walk-Under-the-Ground.

HOME.—Home is the only place in all this world where hearts are sure of each other. It is the place of confidence. It is the place where we tear off that mask of guarded and suspicious coldness which the world forces us to wear in self-defense, and where we pour out the unserved communication of full and confiding hearts. It is the spot where expressions of tenderness gush out without any sensation of awkwardness, and without any dread of ridicule. Let a man travel where he will, home is the place to which "his heart untrammelled fondly returns." He is to double all his pleasures there. He is to divide all pain. A happy home is the single spot of rest which a man has upon earth for the cultivation of his noblest sensibilities.

St. Martin's Eve.

Many years ago a singular custom prevailed in certain districts of the French Empire, by way of celebrating St. Martin's Eve, which was the 10th of November. The younger portion of the community formed a procession carrying lighted toy lanterns of churches, and all manner of illuminations, many made of paper and borne aloft on long poles, while a horrible din was kept up by the blowing of horns—tin horns, cows horns, brass horns, in fact any kind of a horn that would make a noise. Mrs. Wood in her story of St. Martin's Eve, explains the origin of this singular custom, and its many rites.

When the Saint Martin was on earth in the flesh, sojourning in a French-Flemish town, his donkey got lost one dark night on the neighboring downs. The Holy man was in despair, and called upon the inhabitants to aid him in his search. The whole population at once responded and turned out with horns and lanterns, a dense fog prevailing at the time. Tradition says their efforts were successful and the lost beast was restored to its owner. Hence commenced this annual custom and most religiously has it been observed every since.

On St. Martin's Eve, the 10th of November, as soon as darkness comes on, the principal streets of the town are perambulated by crowds carrying their horns and lanterns. Police keep the streets open; carriages, carts and horses are not allowed to pass during the two or three hours that it prevails; and in short every consideration gives way to the horns and lanterns on St. Martin's Eve. It is looked upon as a religious fete and sanctioned by the authorities.

The Conversation of Women.

It is very well to call the talk of women trifling and frivolous; if it is pleasant and graceful, it is all that can be desired. Conversation should be the relaxation, not the business of life; and the moralists who require that it should always be of an "improving" character have no idea of its proper social uses. Improving! have we not books, lectures, institutions, and a complicated educational machinery enough of all kinds, to improve us all off the face of the earth, if Nature did not oppose a little wholesome duncehood to this sweeping tide of instruction? Must the school-mastor still follow us into our little holiday? If the "queens of society" will only give us talk which shall be bright without ill-natured sharpness, playful without silliness—if they will show us that affection, vanity, jealousy, and slander are no necessary ingredients in the social dialogue, but rather they give an ill-savor to the wittiest and the cleverest play of words—if they will remember that good-humor, sympathy, and the wish to please for the sake of giving pleasure, will lend a charm to the most common-place thoughts and expressions—their conversation will "improve" us, perhaps, quite as much as most popular lectures and some popular sermons. The talk which puts you in good humor with yourself and with your neighbors is not wholly profitless. If it has made half an hour pass pleasantly, which, with a less agreeable companion, would have been spent in gloomy silence, broken by spasmodic efforts, resulting in disgust at your own and his or her stupidity, it will have effected one of the ends for which speech was given us.—*Etc.*

A YOUNG LADY FARMER.—A young lady in Mississippi, who had just graduated, came home, and hired a few colored people, and undertook the experiment of woman farming. The results at the end of the year were—eight banks (?) of potatoes, 600 bushels of corn, and \$969 in cash, from the sale of cotton, after all expenses were paid. Such an instance shames many of our kid-glove young men, who complain that the times are so hard they cannot get a living.

It is at home that every man must be known by those who would make a just estimate either of his virtue or his felicity; for smiles and embroidery are alike occasional, and the mind is often dressed for show in painted honor and fictitious benevolence.

It is a fine thing to be able to ripen without shrivelling; to reach the calumness of age and still keep the warm heart and ready sympathy of youth.

YOUNG FOLKS' COLUMN.

In the Fisher's Hut.

BY HELEN L. BOSTWICK.

Storm blowing wild without, waves at fearful light;
Three little frightened ones keeping watch and light;
Ill fare the fishermen out of port to-night.

Winsome maid is Blonde-hair, scarcely turned eleven;
Sturdy boy Brown-hair, lacks a month of seven;
Baby-girl is Gold-hair, one year out of heaven.

Fast drives the little boat; there are rocks ahead.
Fearful how the father's heart in that hour of dread!
"Christ, they are motherless!" were the words he said.

"Christ shield my motherless!" Holy angels, bear
Heavenward that anguished cry; yet a little prayer,
"Please God, keep father safe," was before it there.

Bony maiden Blonde-hair, heaps the driftwood higher,
Fearful heart has Brown-hair holding closely by her,
Sleepy little Gold-hair winking at the fire.

O, ruddy cottage gleam, pierce the blinding storm!
Brood o'er the misty crags like a rosy form:
Hands make a gallant fight when the heart is warm.

Crash! parts the little boat amid the breakers white,
Strike bravely, fisherman, for the home's in sight!
Love pulls in every stroke—Love will win to-night!

Happy eyes has Blonde-hair, pouring father's tea;
Noddy tongue has Brown-hair, nestling on his knee;
"Coo," says baby Gold-hair, waking up to see.

—Young Folks.

The Arithmetic Lesson.

Nellie said to herself, "If I make mother happy four times a day, then, as there are three hundred and sixty-five days in a year, I shall make her happy three hundred and sixty-five times four." As she thought it would be more convenient in multiplying, she put down three hundred and sixty-five first, on her new slate, and four under it, and found the answer to be one thousand four hundred and sixty.

"One thousand four hundred and sixty times! O mother, only think of that! I mean to begin to-day, and perhaps, if I try, I can make her happy more than four times a day. Perhaps I might two thousand times a year."

"But there are others in the family, Nellie. Think of your father and little brother, and cousin Alice, too, who comes to see us sometimes. Think of all your friends! It may be in your power to make somebody else happy twenty times every day, and that would be many thousands a year! And do not forget that this arithmetic will give just as true an account of the unhappiness you cause. How sad to think you might make somebody unhappy many thousand times every year?"

Little boy, how many times a day do you show an unkind or disobedient spirit? Little girl, how many times a day do you look sullen, and speak cross words? Somebody is always made unhappy by it. Think of the multiplication table, and see how much sorrow or how much happiness you may cause your dear mother or your friends in a year. Oh, I do hope, as you think of this, you will ask Jesus to make you like Him, and help you give some one cause for joy every day.

Boys on the Farm.

Boys have always been so plenty that they are not half appreciated. We have shown that a farm could not get along without them, and yet their rights are seldom recognized. One of the most amusing things is their effort to acquire personal property. The boy has the care of the calves that always want feeding or shutting up or letting out; when the boy wants to play, there are those calves to be looked after—until he gets to hate the name of calf. But in consideration of his faithfulness, two of them are given to him.

When they get to be steers, he spends all his holidays in breaking them to a yoke. He gets them so broken in that they will run like a pair of deers all over the farm, turning the yoke and kicking their heels, while he follows in full chase, shouting the ox language until he is red in the face. When the steers grow up to be cattle, a drover one day came along and took them away, and the boy is told that he can have another pair of calves; and so, with undiminished faith, he goes back and begins again to make his fortune. He owns lambs, and young colts in the same way, and makes just as much out of them.—*Charles D. Warner.*

"Why don't you get down and lead the horse? That is the way to keep warm," said a gentleman to a boy one cold day. "No," replied the youth, "it is a b-b-borrowed horse, and I'll ride him if I freeze!"

LITTLE can be done well to which the whole mind is not applied.

DOMESTIC ECONOMY.

Soup, and How to Make It.

It is, I think, much to be regretted that good soup is unknown in nine houses out of ten; for the wishy-washy, greasy liquid which ignorant cooks, who have no knowledge of the science of cookery, impose upon their employers, is not soup at all; and one might just as well imbibe the water in which the dishes of yesterday's dinner were washed. The unwilling guest is too often forced to partake of a nauseous and indigestible composition, which annoys the palate, and against which the stomach will revolt. How much better it would be to commence dinner with some plainly dressed but wholesome fish, or a thick soup, which can be achieved by any tolerable cook; but to make a good clear soup requires experience and skill, and a certain amount of knowledge of the chemistry of gastronomy. A good clear soup is a *chef d'œuvre*, and is infallibly the work of a culinary artist of no mean order. Stock is the basis of all soups; it is the soul of cookery; and it is hardly to be expected that one with but a smattering of culinary knowledge (most cooks know less of cookery than anything else) should yet be able to understand its vital principle.

Thick soups are useful for luncheon; and when a substantial meal is required they are better, calculated to satisfy the appetite; whereas thin soups, to a certain extent, only excite it. Hence, when other things are to follow, and it is not intended to choke off the guest at first, a clear soup tends to stimulate the appetite to, further gastronomic delights, whilst a thick soup is calculated to cause repletion, and so to prevent the palate from enjoying those pleasures which the art of cookery, with a lavish hand, presents to its consideration.

The skillful amalgamation of materials, aided by knowledge of the essential principles of culinary chemistry, constitutes a judicious combination of subtle essences and mysterious flavors, all evident, but none predominating—an harmonious and delicate mixture of vegetable and animal juices, which the enraptured epicure denominates soup. The stock, the cornerstone of the fabric, should be made of good fresh meat; the stock-pot should be gradually heated to the boiling point, and vegetables, etc., added; it should be well skimmed and cold water should be occasionally thrown in to facilitate the rising of the scum, as this process of skimming is essential to the making of good soup. The kind of meat should be either leg or shin of beef; the meat should be cut off the bone, and the bone should be chopped. The stock-pot should not be allowed to boil again, but should be gently simmered for five or six hours; and by this process the full flavor is extracted both from the meat and from the vegetables.

Stock, too, should always be made the day before it is required to be used for soup, as the fat will, when cold, settle upon the top of it in cakes, which are very easily removed. Bones of fowls, game, rabbits, or meat trimmings, may be used in addition to leg or shin of beef in the preparation of stock; but to make it for white soups it must necessarily be white, and so veal, fowl, and rabbit only are admissible in making white stock. I think that soup is worthy of occupying a high place in the scale of culinary education, and a prominent position in the study of dietetics, when it is remembered that the essence of meat is rendered more palatable and digestible when mixed with other essences and flavors.—*Ec.*

COOKING FOOD BELOW 212° F.—Dr. Jeanel. From a series of experiments, it appears that food (meat as well as vegetables) boiled at 200° is more nutritious and of better flavor than when boiled at or above 212°. The author illustrates this point by what takes place in mountain localities (every 100 metres' rise above the sea-level makes a difference of 0.6° less in the boiling-point of water); as, for instance, at Potosi, Bolivia, at 4,061 metres above sea-level, the water boils at 187°; at Mexico, 2,277 metres above sea-level, water boils at 198°; at Briancon, France, 1,321 metres above sea-level, at 184°, also by the action of the so-called Norwegian cooking apparatus.

A SUBSTITUTE FOR BUTTER.—It may interest many of our readers to know that the demand for clarified beef suet, as a substitute for butter for cooking purposes, is increasing. It is sold in London for half the price of the best butter; and it will keep good much longer, without the admixture of salt.

HOW TO TRAP RATS.—These vermin are often a sore pest to housekeepers, and any new idea which will lead to their extermination is always of interest. A correspondent of the *Germantown Telegraph* writes as follows: "To keep rats within endurable bounds is somewhat a difficult matter, for a rat is as cunning as a fox, and as hard to catch; but there is such a thing as working strategy on it. A rat never digs a hole without it has some projection to begin with, say a stone, a stick of wood, or anything else that makes an angle with the ground; a cellar wall it likes the best. If a rat is chased in a cellar, or other room, it will run round by the wall, and is decidedly averse to leaving it. From this habit we have a hint how to out-general it. The common steel-trap is the best article for the purpose. Stand a barrel or box, or other article, within four inches of the wall, and in that open space set the trap, without anything to hide it. The rat, in following the wall, will go into the trap rather than go round the barrel. When it is caught, smoke the trap with a piece of burning paper, shift your barrel to another place and set the trap as before.

GOOD FRIED CAKES.—A correspondent of the *American Rural Home* furnishes that journal the following: Take one-half cup of sugar; one cup of sour cream; one egg; one tea-spoon full of cream of tartar; one tea-spoon full of soda, and a little salt. First beat the egg, then add the sugar, stirring to a creamy consistency; dissolve the cream of tartar and soda together in a cup of cream and add to the egg and sugar, stirring in the flour until the mass becomes quite stiff. Then flour the moulding-board, turn upon it the dough, work in as little extra flour as possible in getting the mass to a proper consistency for frying. Sweet cream or milk may be used when sour cannot be had.

HOW TO CHOOSE BUTTER.—Put a knife into the butter if salt, and smell it when drawn out; if there is anything rancid or unpleasant, it is bad. Being made at different times, the layers in casks will vary greatly, and you will not easily come at the goodness but by unhooping the cask, and trying it between the staves. Fresh butter ought to smell like a nosegay, and be an equal color all through; if sour it has not been washed enough; if veiny and open, it has been mixed with an inferior sort.

A SOLUTION of three parts of borax and two and a half parts of sulphate of magnesia will render dress fabrics fire-proof.

Mechanical Hints.

ALLOY FOR JOINING BRASS TO IRON.—The difficulty of uniting iron to brass is created by the unequal rate of expansion in the two metals, which destroys the unity when the temperature is changed. There is an alloy of copper for which the inventor claims that its expansion by heat is so similar to that of iron and steel, that the surfaces may be regarded, when joined, as permanently united for all practical purposes. The formula is as follows: Tin, three parts; copper, thirty-nine and a half parts; and zinc, seven and a half parts.

ARCHITECTURAL COMPETITION IN BERLIN.—The German government intends to erect a new Parliament house in Berlin, and architects of all nations are invited to send in designs for the building before April 15th next, appending their names, to the Imperial Chancery in Berlin. A prize, amounting to about \$4,250 of our money, will be awarded for the accepted design, and smaller premiums will be given for each of the next four, in the order of merit.

BRONZING.—The red bronze seen on some chandelier work is produced by dipping the work in nitric acid, in which old rusty nails or iron must have been put. The work is afterwards dressed with Venetian red and stale beer, and well brushed; wiping the mixture off from the most prominent parts. The operation seems simple, but it requires no mean skill to secure good results and tasteful effects.

FRENCH SILVER LAC consists of very finely divided tin precipitated from its solution by means of zinc. Applied by some adhesive substance to wood, paper, and metals, it communicates to them a metallic silvery appearance.

DAMP WALLS may be prepared for painting by applying with a brush, while hot, a mixture composed of one pound of glue dissolved in a gallon of water and thickened with red lead.

Onions.

Mr. Warner, in his book "My Summer in a Garden," pays this tribute to the onion:

"I know there is supposed to be a prejudice against the onion; but there is rather a cowardice in regard to it. I doubt not that all men and woman love the onion, but few confess their love. Affection for it is concealed. Good New Englanders are as shy of owning it as they are of talking about religion. Some people have days on which they eat onions—what they might call 'retreats,' or their 'Thursdays.'"

The act is in the nature of their religious ceremony, an Elusianian mystery—not a breath of it must go abroad. On that day they see no company; they deny the kiss of greeting to the dearest friend; they retire within themselves, and hold communion with one of the most pungent and penetrating manifestations of the moral world. Happy is said to be the family which can eat onions together. They are, for the time being, separated from the world, and have a harmony of aspiration. Let them become apostles of the onion; let them eat, and preach it to their followers, and circulate tracts of it in the form of seeds. In the onion is a hope of universal brotherhood. If all men eat onions at all times, they will come into a universal sympathy. Look at Italy, I hope I am not mistaken as to the cause of her unity. It was the reds that preached the gospel that made it possible. All the reds in Europe—all the sworn devotees of the mystic Mary Ann ate of the common vegetable. Their oaths were stronger with it. It is the food also of the common people of Italy. All the social atmosphere of that delicious land is laden with it. Its order is a practical democracy. In the churches all are alike; there is one faith, one smell. The entrance of Victor Emanuel into Rome is the pompous proclamation of a unity which garlic had already accomplished, and yet we, who boast of our democracy, eat onions in secret."

The Wine Interest.

The *Napa Register* collates the following touching the wine interest: "The product of the principal wine districts of the south of Europe—the south of France—the Rhine and Moselle in Germany—is largely deficient, both in quantity and quality. In Portugal and Spain, including their dependencies, the Azore and Madeira islands, the quantity is short and the quality poor. In Hungary the quantity is fair, but quality very poor. In short, the vintage of 1871 is almost a failure in all these districts from which our country has hitherto drawn its supplies. As a natural result of this failure, our California wines will be in demand. The foreign market being short, we must supply the demand in the Eastern States; hence, the prices of native wines must rapidly and materially advance. Indeed, we learn that speculators are now paying thirty-five cents per gallon for Mission wines, which have heretofore commanded no more than twenty-five cents; and wines of foreign variety are advancing accordingly."

CONCERNING PEANUTS.—The New York *Standard* dwells learnedly upon peanuts. First, as to varieties: "There is the African peanut, the Georgia peanut, the North Carolina peanut, the Tennessee peanut, and the Virginia peanut. Their qualities improve in the order in which they are here set down, the first being the poorest and the last the best. If you want peanuts, see that you get the sort coming from the old Dominion." Then as to the quantity consumed, the editor tells us: "There are annually consumed in the country 800,000 bushels, valued, in the wholesale market at about one and half million dollars, so that the sum paid yearly by the consumers cannot be much less than three millions of dollars. Virginia produces nearly one-half this quantity, and Tennessee over one-quarter, while about one-eighth is raised by Georgia and North Carolina, Africa furnishing us the other eighth."

And yet with this showing, the peanut-vendors in the Eastern cities, as far south as Washington, D. C., to give character to their stock, sell what they declare to be *California Peanuts*.

The engineer of the Alexandria, Va., hydraulic steam fire-engine, while cleaning out his apparatus a few days ago, found three live fish in the pumps. They had undergone some rough treatment since they left the street mains, having lost all their scales, and a portion of their tails, but otherwise were apparently in good condition.



THE CALIFORNIA COTTON GROWERS' AND MANUFACTURERS' ASSOCIATION.

INCORPORATED APRIL 10, 1871, FOR TWENTY-FIVE YEARS.

Capital Stock, \$500,000, in Shares of \$20 Each.

The Company's Plantation of 10,000 Acres is situated at and surrounding the town of Bakersfield, in Kern County. The Association has recently purchased of Messrs. Livermore & Chester, Real and Personal Property to the amount of \$200,000. The Company's stock, independently of the profits of raising Cotton and Manufacturing the same, is fully secured by Real Estate.

OFFICERS:
L. H. BONESTELL, San Francisco.....President.
JAMES D. JOHNSTON, San Francisco.....Secretary.
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23v2-11

WILLCOX & GIBBS IMPROVED NOISELESS Family Sewing Machine IS THE BEST IN THE MARKET.

It is the Most Simple,
Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

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Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs
Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

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Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.
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113 Post Street, S. F.
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H. G. PRATT,
113 Commercial street, between Davis and
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SAN FRANCISCO,

Has been engaged for the last ten years in the
Manufacture of

BOX AND THERMOMETER CHURNS in this city.

Also manufactures all kinds of Implements generally
used in Dairies. 6v3-3m

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Importers, Jobbers and Manufacturers of

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HENRY K. CUMMINGS & CO.,
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ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco.

Our business being exclusively Commission, we have
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If you believe a club of ten names can be had in your neighborhood for the PACIFIC RURAL PRESS, do not wait for some one else to lead off, but secure them yourself. We will send the eleventh copy free on receiving \$3 each for a club of ten. Names may be added afterwards at the same rates. If you do not succeed in getting ten names at once, send us a less number and \$3.50 each. If you afterwards complete the club, we will allow discount sufficient on the last names to make the whole \$3 each. The names of all club subscribers will be addressed at this office. Subscription blanks and sample papers sent free to those desiring to get up clubs. Postmasters, or agents, who are willing to solicit subscriptions or renewals, will please send for lists and rates of commission.

DEWEY & CO., Publishers.

Daily Weather Record.

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK ENDING WEDNESDAY, MARCH 6, 1872.

Place of Observation.	Date.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Wind, with rain.	Force of Wind, with rain, and hail.	Amount of Rain.	State of Weather.
San Francisco.	Thurs. 29	30.21	47.7	Cal.				4.4	Cloudy
	Fri. 30	30.24	51.8	Cal.				4.4	Threats
	Sat. 31	30.31	50.8	Cal.				4.4	Cloudy
	Sun. 1	30.18	51.8	N.W.	15	Brisk		1.1	Cloudy
	Mon. 2	29.95	53.3	N.W.				1.1	Fair
	Tue. 3	29.88	55.2	Cal.				3.4	Cloudy
	Wed. 4	30.18	53.9	W.	8	Fresh		5.5	Clear
San Diego.	Thurs. 29	30.17	48.7	N. E.	2	Light			Clear
	Fri. 30								
	Sat. 31								
	Sun. 1								
	Mon. 2								
	Tue. 3								
	Wed. 4								
San Jose.	Thurs. 29	30.21	47.7	Cal.				4.4	Cloudy
	Fri. 30	30.24	51.8	Cal.				4.4	Threats
	Sat. 31	30.31	50.8	Cal.				4.4	Cloudy
	Sun. 1	30.18	51.8	N.W.	15	Brisk		1.1	Cloudy
	Mon. 2	29.95	53.3	N.W.				1.1	Fair
	Tue. 3	29.88	55.2	Cal.				3.4	Cloudy
	Wed. 4	30.18	53.9	W.	8	Fresh		5.5	Clear

Rainfall at Turlock, San Joaquin Valley.

Eds. PRESS:—The amount of rain for the season to date in this portion of San Joaquin Valley is as follows:

To January 1st.....	8.32 inches.
For the month of January.....	2.22 inches.
For the month of February.....	2.42 inches.

Total for the season.....13.16 inches.

To compare with former years:

Total rain to March 1st, 1869.....	9.93 inches.
" " " " 1870.....	6.35 inches.
" " " " 1871.....	4.80 inches.
" " " " 1872.....	13.16 inches.

It may be well to mention that all measurements of rain at this point have been made with the same gauge each year, and that the instrument used is the brass cylinder gauge of the Smithsonian Institute at Washington. The same instrument having been used constantly here, we are enabled to compare faithfully the past four seasons in our locality. It is seen that to date we have had nearly three times as much as fell in this date last year; more than twice as much as in 1870, and nearly one-third as much again as fell in 1869 to March 1st. Between five and six inches fell after this date in the spring of 1869; hence we have good reason to expect not far from 20 inches as our total rainfall here for the present season—certainly something between 17 and 22 inches. Indeed, everything continues to indicate just such an average season as has followed our driest years for three successive periods since '49. The effect of these excellent rains, whose distribution is all we could have asked on our sandy soils, is evident in the fine appearance of our grain fields. By the common consent of our oldest settlers, never has the prospect for first-class crops been more promising in San Joaquin Valley Turlock, Stanislaus county, March 1, 1872. J. W. A. W.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, March 7, 1872.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, #1.....	26@29
Santa Cruz Leather, #1.....	26@29
Country Leather, #1.....	26@29
French Sheep, all colors, #1.....	26@29
Heavy California skins are firm, with an upward tendency.	
Jodot, 8 Kil., per doz.....	\$60.00
Jodot, 11 to 15 Kil., per doz.....	76.00@95.00
Jodot, second choice, 11 to 15 Kil., per doz.....	61.00@80.00
Lemoine, 12 to 15 Kil., per doz.....	85.00
Levin, 12 and 15 Kil., per doz.....	88.00@70.00
Cornellian, 16 Kil., per doz.....	70.00
Cornellian, 12 to 14 Kil., per doz.....	69.00@60.00
Oregonian, #1, per doz.....	54.00
Simon, 20 Kil., #1, per doz.....	65.00
Simon, 20 Kil., #2, per doz.....	68.00
Simon, 24 Kil., #1, per doz.....	72.00
Robert, 7 and 8 Kil., #1.....	25.00@40.00
French Kips, #1, per doz.....	1.00@1.30
French Sheep, all colors, #1.....	65.00@80.00
French Sheep, all colors, #2.....	15.00
Eastern Calf for Backs, #1.....	1.15@1.25
Sheep Roans for Topping, all colors, #1.....	8.00@13.00
Sheep Roans for Linings, #1.....	5.50@10.50
California Russett Sheep Linings.....	1.75@3.50
Best Jodot Calf Foot Legs, #1 pair.....	5.25
Good French Calf Foot Legs, #1 pair.....	4.50@5.00
French Calf Foot Legs, #1 pair.....	4.00
Harness Leather, #1.....	30.00@37.50
Fair Bridle Leather, #1 doz.....	48.00@72.00
Skirting Leather, #1.....	24.00@37.50
Welt Leather, #1 doz.....	30.00@30.00
Buff Leather, #1 foot.....	21.00
Wax Side Leather, #1 foot.....	19.00@20.00

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., March 7.

FLOUR—We note a fair local demand with an improved inquiry for export. Sales reported embrace 7,000 bbls. Cal. extra, 6,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$5.50@5.62½; extra, in sacks, of 196 lbs. \$6.25@6.50. Standard Oregon brands, extra, may be quoted at \$6.00@6.25.

WHEAT—The market is firm and shows more activity, but prices have declined. Sales aggregate 25,000 sacks fair to choice at \$2.00@2.17½; 100 lbs. Quotable at close at \$1.90@2.15 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 11d. and 12s. per cental.

BARLEY—The interior demand is good, otherwise the market is rather dull. Sales embrace 9,000 sacks ordinary coast to choice bay, at \$1.40@1.55, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.55@1.75 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$2.00 for yellow and \$2.30 for white 100 lbs.

CORNMEAL—Is quotable at \$2.50@3.00 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.35@2.40 per 100 lbs.

RYE—According to quality is quotable at \$2.12½@2.20 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Selling at \$25.00 per ton from the mill.

MIDDINGS—For feed, are selling at \$32.50 per ton from mills.

OIL CAKE MEAL—Continues at \$40 from the mill.

HAY—Receipts have been fair, and prices at close are \$15.00@23.00 for fair to choice 1 ton.

HONEY—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$4 per doz.

POTATOES—Receipts have been heavy during the past week. Range for best kinds is between 40@75c.

HOPS—The range is 50@65c.

HIDES—During past week 1,840 Cal. dry sold at 19@20 and 1,176 salted at 8½@9½c; 890 dry murrain, 10@13c.

WOOL—Light sales of clean fall at 28@30c. Spring clip has not yet come in but a number of contracts have been made from 37½ to 40c. for clean and 45 for choice. The clip of Flint, Bixby & Co., has been contracted for at 30c.—will probably be burry. Spring clip will find ready sale.

TALLOW—Market firm at 8@9c. 1 lb.

SEEDS—Flax 3c; Canary, 5@7c; Alfalfa, 16@20c; Mustard—California Brown, 3@6c; Cal. White 3½@4½c. 1 lb.

PROVISIONS—California Bacon 13½@14c; Oregon, 13½@14c; Eastern do. 12½@13c; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14½@15; Oregon, 15½@16c; California Sugar-cured Hams, 16½@17c; Oregon do. 17@18c; Eastern do. 17½@18c; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.40@3.60; Navy \$3.50 100 lbs.

ONIONS—Fair to choice, \$1.50@3.00 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c 1 lb.; Cal. Walnuts, 14@15 Hickory, 12c; Brazil, 16c; Chili Walnuts, 11c; Italian Chestnuts 35@40c; Eastern Chestnuts, 20c; French Almonds, 22@25c; Princess Almonds, 30@35c; Cocoanuts, \$6.00@7.00 per 100.

FRESH MEAT—Market has remained firm since last report. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 14@15c. 1 lb. do. 2d quality 10@12c 1 lb.; do. 3d do. 8@10c.

VEAL—Quotable at 8@14c.

MUTTON—10@12½c. 1 lb.

LAMB—Scarce at 15@20.

PORK—Undressed grain-fed is quotable at 7½@8½c. dressed, grain-fed, 10½@11½c. per lb.

POULTRY—Live Turkeys, 20@22c. 1 lb.; dressed, 23@25 per lb.; large Hens 9½@10½.

Roosters, \$9.50@10.50 per dozen; Spring Chickens, \$8.00@9.00; Ducks, tame, \$11.00@12.00 per doz.; Geese, \$15@18 1/2 dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 1/2 doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in good supply; it may be quoted at 25@32½c; California firkin butter, 20@25c. Pickled, 20@25c. Eastern firkin, 20@25c. 1 lb.

CHEESE—California, 18@19c, Eastern, 18@19c. per lb.

Eggs—California fresh, 30@32½c. 1 doz.

LARD—California 12½@13½; Oregon in bbls. and kegs 12½@13c; Eastern in cases 14@14½c; do in tes. 12½@13c. per lb.

FRUIT.	
Tah. Oranges, M. 20 00@30 00	Cal. do 20 00@25 00
California do. 10 00@20 00	Bananas bunch 2 00@3 00
Limes, #1 M. 20 00@30 00	Apples, cutting, bx 2 00@3 50
Austin Lemons, M. 40 00@	do cooking, bx 1 00@1 50
Sicily do #1 M. 8 00@9 00	Pears, #1 box 1 00@2 25

DRIED FRUIT.	
Apples, #1 do.....	6c @ 8c
Pears, #1 do.....	8 @ 10
Peaches, #1 do.....	7 @ 9
Blackberries, #1 do.....	5 @ 6
Plums, #1 do.....	5 @ 6

VEGETABLES.	
Cabbage, #1 do.....	15 @ 17
Garlic, #1 do.....	3 1/2 @ 4
Rhubarb, #1 do.....	15 @ 16
Green Peas.....	—

MARKETABLES.	
Marfil Squash, ton 17 50@20 00	
Asparagus, #1 do.....	12 1/2 @ 15
New Potatoes #1 do.....	3 1/2 @ 4
Tomatoes.....	10c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for reasonable articles under this head.

BAGS AND BAGGING—The market is firm for all kinds. Burlap sacks 16½c; Flour sacks 10½@11c. for qrs. and 16½@16¾c. for hlfs. Standard Gunnies are jobbing at 21c@22c; Wool 75.

BOOTS AND SHOES—An active spring business is expected in this branch of trade.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. The exports embrace 210,000 feet of lumber and 100,000 shingles for Honolulu and 166,000 feet of lumber for Callao. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do dressed \$25; Spruce \$17@18; Redwood \$16@18 for rough and dressed, and 12 for refuse. We quote Laths at \$2.75@3.00; Shingles \$2.50 @2.75.

Redwood Lumber Association's prices are as follows:

Merchandise worked rustic, \$31.00 to \$32.50
 Refuse do do 20.00 to 21.50
 Merchantable surfaced and rough clear 28.00 to 30.00
 Refuse surfaced and rough 18.00 to 20.00
 Merchantable beaded flooring 28.00 to 30.00
 Refuse do do 18.00 to 20.00
 Merchantable rough 15.00 to 16.00
 Refuse do do 11.00 to 12.00
 Fancy Pickets 22.50 to 25.00
 Rough Pickets 15.00 to 16.00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manila, 19½; Rio 19½@20.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 1/2 doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 1/2 doz.; Mace \$1.50 1/2 lb.; Ginger 15c 1/2 lb.

FISH—We quote Pacific Dry Cod in bundles at 5c., and in cases at 8c.; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 1/2 doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$12; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$5.50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.62½, 1/2 ream.

PAINTS—We quote White Lead at 10@12½c; Whiting, 2½c; Chalk 2c; Paris White 3c; Ochre 3@3½c; Venetian Red 3@5c; Litharge 9@11c. 1 lb.

RICE—Sales of China No. 1 at 8c. and No. 2 at 7@7½c 1 lb; Siam, quotable at 6½@7½c in mats; Carolina Table, 10@11; Hawaiian, 8½@9c per lb.

SUGAR—We quote Cal. Cnbe at 12½c; Circle A Crushed, 13½c, and Granulated 12c; Yellow Coffee and Golden C. 10½c; Hawaiian 7½@10½c as extremes 1 lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14; Fine Liverpool, \$22.50@23.00 1/2 ton.

SOAP—The prices for local brands are 5@10c, and Castile, 12@13c 1 lb.

TEA—We quote Hyson at 60@75c; Gunpowder and Imperial, 95c@1.05; Young Hyson and Moyne, 90c@1.15; Foo Chow Oolong, 50@90c; Ponchong, 37½@45c; Souchong, 50@75c; Japan 40@75c. 1 lb.

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, March 7, 1872	
IRON.	
Scotch and English Pig Iron, #1 ton.....	\$5.50 @ 60.00
White Pig, #1 ton.....	45.00 @
Refined Bar, bad assortment, #1 do.....	— @ 65½
Refined Bar, good assortment, #1 do.....	— @ 66
Boiler, No. 1 to 4.....	— @ 66
Plate, No. 5 to 9.....	— @ 66
Sheet, No. 10 to 13.....	— @ 66
Sheet, No. 14 to 20.....	— @ 66
Sheet, No. 24 to 30.....	— @ 66
Horse Shoes.....	7.50
Nail Rod.....	10
Norway Iron.....	8
Corrected Irons for Blacksmiths, Miners, etc. 5 @ 6	
COPPER.	
Sheathing, #1 do.....	24 @ 25
Sheathing, Yellow.....	24 @ 25
Sheathing, Old Yellow.....	11 @ 11½
Composition Nails.....	— @ 24
Composition Bolts.....	— @ 24
TIN PLATE.	
Plate, Charcoal, 1X #1 box.....	12.00 @
Plate, 1C Charcoal.....	10.00 @
Roofing Plate.....	11.00 @
Bacon Tin, Slab, #1 do.....	— @ 45
STEEL. —English Cast, #1 do.....	16 @ 17
Drill.....	16 @ 17
Flat Bar.....	17 @ 20
Plough Point.....	3 1/2 @ 12½
Rough (for mould boards).....	— @ 12½
QUICKSILVER. —#1 do.....	— @ 65
LEAD. —Pig, #1 do.....	— @ 6½
Sheet.....	— @ 8½
Bar.....	— @ 9
ZINC. —Sheets, #1 do.....	10 @ 10½
Borax, Refined.....	25 @ 30
Borax, crude.....	5 @

San Francisco Retail Market Rates.

THURSDAY NOON, March 7, 1872.

MISCELLANEOUS.					
Butter, Cal. fr. #1.....	25	@ 45	Wheat, cks, 22 3/4	12	@ 13
Pickled, Cal. #1.....	30	@ 35	Potato #3 Harb.	22	@ 15
do Oregon, #1.....	—	@	do do do	22	@ 15
Honey, #1 do.....	25	@ 30	Deer Skins, #1	15	@ 21
Cheese, #1 do.....	25	@ 30	Sheepsks, plain	60	@ 75
Eggs, per doz.....	25	@ 30	do Sheepsk, wln	12 1/2	@ 25
Lard, #1 do.....	18	@ 20	do do do	18	@ 20
Sugar, #1 do.....	6	@ 8	Dry Cal. Hides.....	18 1/2	@ 19
Brown, do.....	10	@ 13	Salted do.....	—	@ 9 1/2
Beet, do.....	10	@ 13	Dry Max. Hides.....	17 1/2	@ 18
Sugar, #1 do.....	—	@	do do do	—	@
Plums, dried, #1	15	@ 20	Codfish, dry, #1	10	@ 12 1/2
Peaches, dried, *	20	@ 30	Live Oak Wood.....	9 50	@ 10 00
Wool Sacks, new	57 1/2	@ 60	Tallow.....	8 1/2	@ 10

"A Thing of Beauty is a Joy Forever."
The Paulownia Imperialis, of Japan

C. C. COOLEY, of Manchester, O., has on his premises, growing luxuriantly, one of the most beautiful Flowering Trees in the world, the same being the PAULOWNIA IMPERIALIS, of Japan. Some nine years since, his brother sent him a small tree, about two feet in height, and about the thickness of one's finger. It is now forty-five high, and measures five feet in circumference at three feet above the ground. Some of the leaves are seven feet in circumference. It commenced to bloom the third year after planting. The flowers are very beautiful, growing in large clusters, sometimes to the number of 120 in one bunch. Each flower is about 1 1/4 inch in length, by two in circumference. They all bloom at one time and are as fragrant as the White Lilly, remaining in bloom from 2 to 3 weeks. No insects trouble the tree, except bony bees, which seem to be very fond of the flowers. It never sprouts, but can be raised from the seed as easily as corn. For ornamenting yards or cemeteries, we can think of nothing which would be more attractive than the tree spoken of.—*Western Pomologist.*

PRICE:

One tree—One dollar and fifty cents.
 Two trees—Two dollars and twenty-five cts.
 Six trees (with one extra to get up of cluh), six dollars.

A Package of One Hundred Seeds, With directions for culture, sent to any address for Fifty Cents.

All Orders addressed to

C. C. COOLEY,
 Box 96, Manchester, Adams Co., O.
 Send Stamp for Circular.

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OF THE PACIFIC COAST!

JAMES G. STEELE & CO.,
 Chemists and Apothecaries.

Import and sell directly from Eastern and European Markets.

NO. 521 MONTGOMERY STREET,

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Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

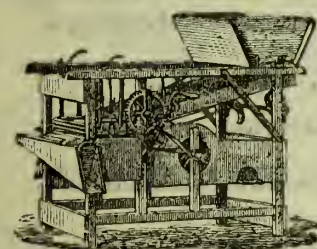
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GRINDELLA LOTION,

For the Cure of Poison Oak.

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FREEMAN'S GRAIN SEPARATOR.



THE BEST PATENT SEPARATOR MADE.

I will guarantee it to Excel any other Machine extant in separating Grain from all kinds of Foreign Seeds. It will separate perfectly the different qualities of Grains, producing pure Seed. It is in every way a Practical and Successful California Machine. It has proven successful over all other Machines on trial, and has taken two First Premiums at the Petaluma Fair. Machines and State and County Rights for sale by

W. D. FREEMAN,
 Tomales, Marin county, Cal.

Send for Circulars.
 P. S.—The right to use my superior Patent Pod Screen will be sold at reasonable prices to owners of Threshers.
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WOOL! WOOL! WOOL!

Highest prices paid for Wool.

Wool Graded, Packed and Shipped for Eastern buyers on reasonable terms.

ROBT. BECK,

Secretary State Agricultural Society,
 Sacramento.

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Walls Whitened or Tinted.

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FARMERS AND DEALERS.

Reaper and Mower Sections and Knives,

Complete, of all Machines in use,

Manufactured by the CALIFORNIA FILE MANUFACTURING CO., San Francisco, Cal.

Sections from \$1.75 to \$2.50 per dozen.

Knives \$1.25 per running foot.

Address Cal. File Man'g Co., Solano st., bet. Tennessee and Minnesota sts., Potrero, S. F. P. O. Box 1478.

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JOHN DANIEL & CO.,

Manufacturers of and Dealers in

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MANTEL PIECES, ETC.,

421 Pine street, between Montgomery and Kearny, SAN FRANCISCO.

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PREMIUM CHESTER WHITE PIGS, PURE BRED POULTRY, other desirable breeds of stock for sale. Send stamp for illustrated Catalogue.

JAMES STEWART & CO.,

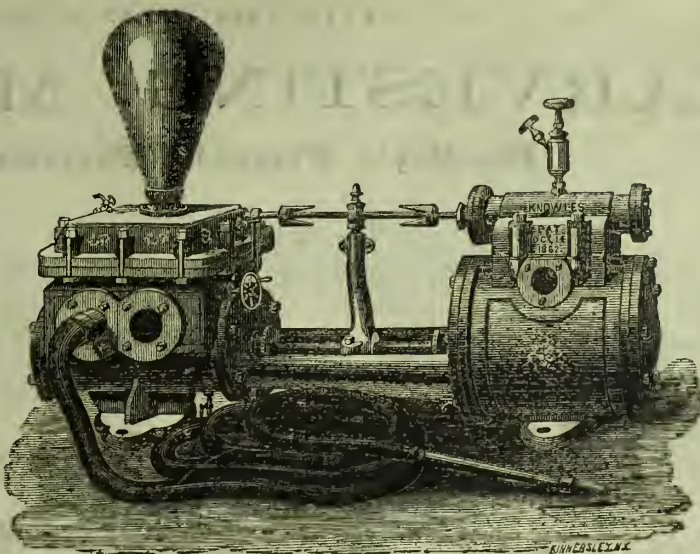
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Kennet, Chester county, Pa.

KNOWLES' PATENT STEAM PUMP.

Awarded First Premium and Diploma

Over all Competitors, at Mechanics' Institute Fair of San Francisco, 1871; also Special Medal and Diploma at State Fair.



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11 1/2 per cent., while others lost as high as 40 per cent., showing great difference in economy.

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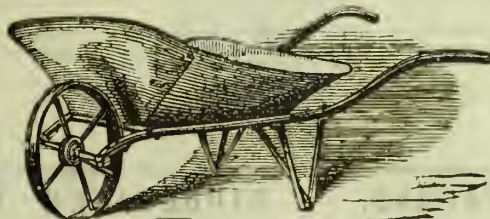
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No. 1, Canal Size.	1 inch.	16 inch.	36x32 inch.	58 lbs.
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They are made of the best material, and every Plow warranted.
They are of light draught, easily adapted to any depth, and are very easily handled.
They will plow any kind of soil, and leave the ground in perfect order.

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These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

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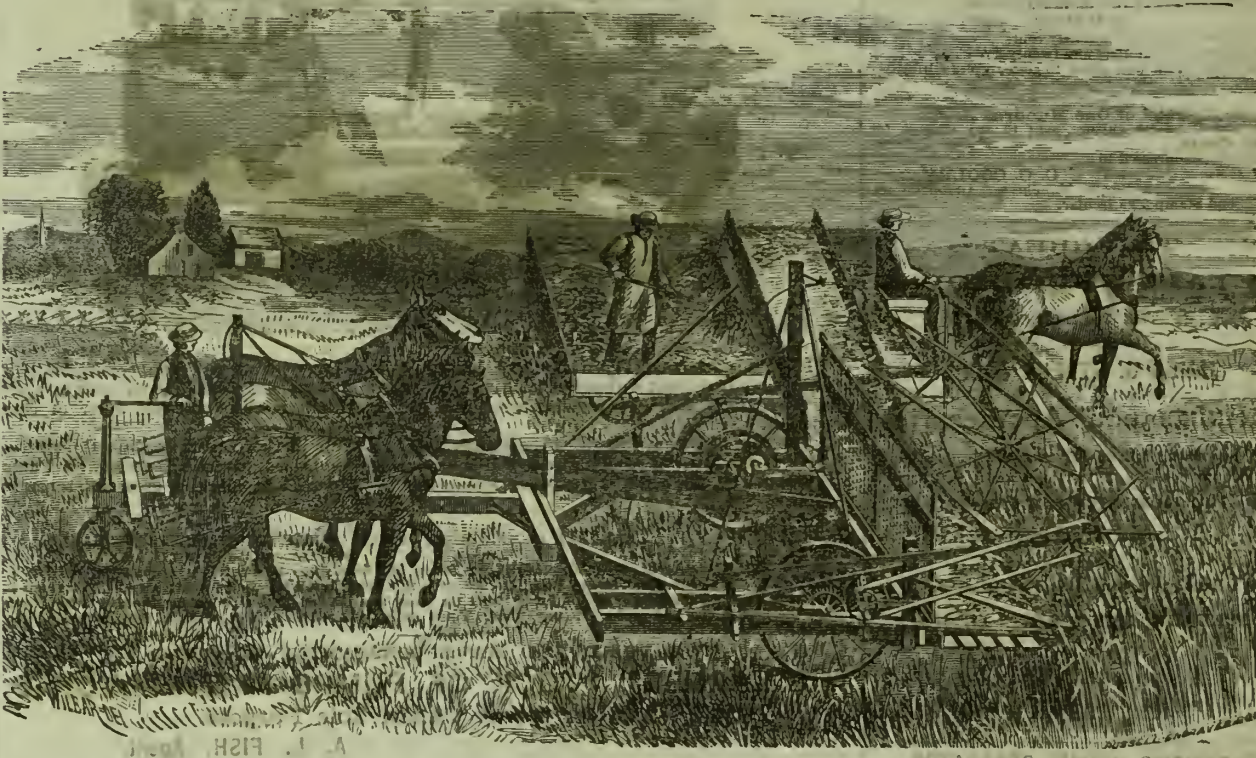
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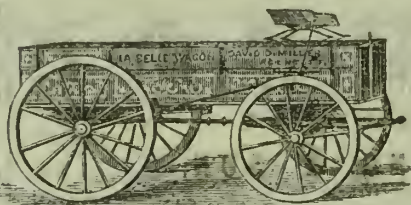
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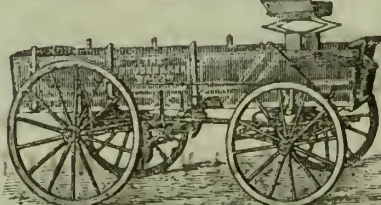
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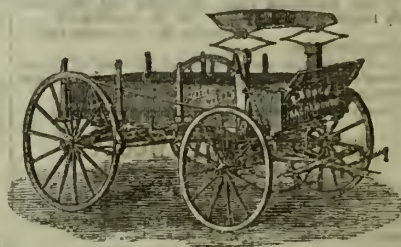
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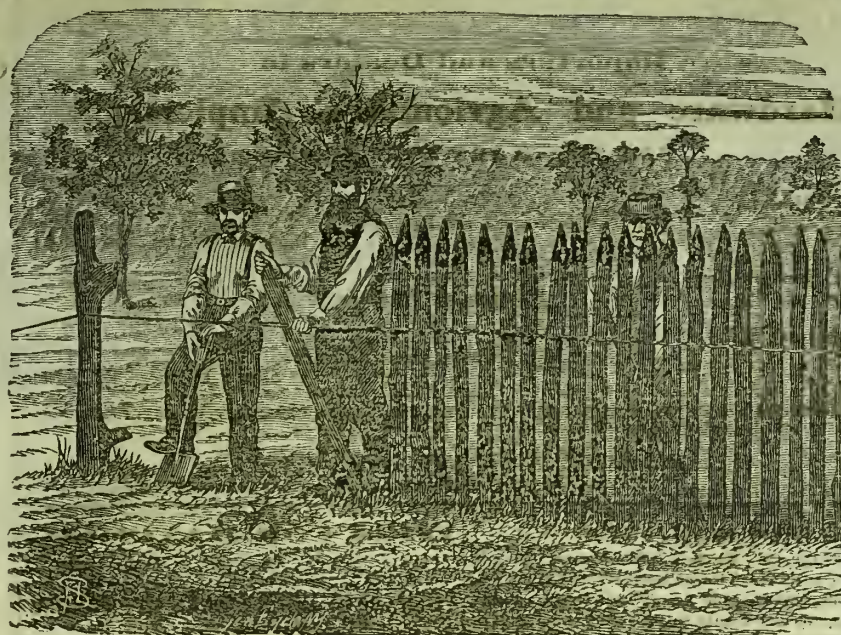
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OVERLAND

THE

MONTHLY.

The Representative

Magazine of America.

The only Literary Magazine

Published on the Pacific Coast.

THE OVERLAND MONTHLY is now in its EIGHTH VOLUME, and, under such encouraging circumstances, may present the following synopsis of its work, and its past and present brilliant and popular list of contributors to its four distinctive departments:

1. **ESSAYS ON LOCAL MATERIAL RESOURCES.**—We may repeat what we said, a year ago, under this head: "The OVERLAND presents, in graphic, picturesque detail, the peculiar resources of the Pacific Coast and Territories; avoiding all puffing and advertising of individuals or corporate interests, as well as the dry husks of mere statistics, facts, and figures. The interested immigrant and resident have come to look upon this feature of the magazine as the means of acquiring reliable information in regard to the country, while the general reader has found it interesting by reason of its literary treatment." Among the well-known contributors to this department, we mention the names of Captain Scammon, Arpad Haraszthy, John Hayes, Dr. Henry Degroot, Mrs. F. F. Victor, Judson Farley, Josephine Clifford, etc.

2. **TRAVELS AND GEOGRAPHICAL SKETCHES.**—Under this heading, we call attention to the articles of Mark Twain, J. Ross Browne, Clarence King, Stephen Powers—Pedestrian journeys through the States and Territories—Charles Warren Stoddard—South-Sea sketches—Joaquin Miller—homes of poets—the late Col. A. J. Grayson, R. W. Raymond, N. S. Dodge—noted European places—H. D. Jenkins, Rev. Thomas Condon, William V. Wells, and many others.

3. **STUDIES OF WESTERN MANNERS AND CIVILIZATION.**—It remained for the OVERLAND to develop the character of the Western Pioneer, as intensified and heightened in the strange and new civilization of the Pacific Slope. First we had Mr. Harte's unique sketches, which have not been equalled by any of his latter productions while away from his field of inspiration, in connection with which appeared Stephen Powers' studies of "A Pine Woods Character," Mr. Emery's "Centrepole Bill," and "Compasses," Mrs. Neall's "Spilled Milk" and "Placer," Prentice Mulford's characteristic articles—"Bally," "Pete," "Camp," "Joe," etc., Mr. Evans' "Shakes," Farley's "Roses," Barr's "Green," "Dawn," Mrs. Victor's "El Tesoro," and Mrs. White's "Spades." In the domain of fiction, the OVERLAND has won the criticism of publishing "the best short stories in any American magazine." Among other writers in this department, we may mention Governor Booth, W. C. Bartlett, Samuel Williams, Neah Brooks, Geo. B. Merrill, B. P. Avery, J. F. Bowman, Mrs. Cooper, Col. Evans, etc.

4. **INDEPENDENT LITERARY CRITICISM.**—A notable feature of the OVERLAND's criticism has been its entire freedom from the ordinary trammels of "publishers' influence, and this has given it a weight and authority not often found in other American magazines.

The present corps of contributors includes the following: Prof. J. D. Whitney, Stephen Powers, Joaquin Miller, Charles Warren Stoddard, Arpad Haraszthy, Ina D. Coolbrith, Mrs. S. B. Cooper, Mrs. F. F. Victor, Rev. Thomas Condon, N. S. Dodge, H. D. Jenkins, Leonard Kip, Edgar Fawcett, Prentice Mulford, Mr. and Mrs. J. J. Platt, Captain Scammon, J. F. Bowman, Mrs. Neall, John Hayes, Josephine Clifford, Taliesin Evans, Theodore F. Dwight, Henry Degroot, M. G. Upton, Dr. Ver Mohr, W. C. Bartlett, Mrs. White, John G. Cremony, Daniel O'Donnell, Wm. V. Wells, Henry George, Judge Hill, Dr. Stout, Josephine Walcott, Gen. J. W. Ames, W. A. Keadall, Therese Yelverton, and many others.

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MARYVILLE, Cal., March 2, 1872.—Messrs. DEWEY & Co., U. S. and Foreign Patent Attorneys, San Francisco. My Patent, through your Agency, is received. Please accept my warmest thanks for the ability you displayed in obtaining it. Thirty years experience in inventing and obtaining patents has taught me the lesson that that patent agency is the cheapest which has the most ability, integrity and energy; and without flattery, permit me to say that I have tried the most prominent patent agents of the Atlantic Coast, and have never had my work so ably done as by your firm. I have carefully reviewed the specifications and claims of my patent, and am unable to find an error, nor would I add a word or line thereto; yet it is the most complicated and difficult invention to specify clearly that I ever invented; still, your lucid specifications and drawings so divest it of its apparent complication, that it may easily be understood by any one. Permit me to say, in conclusion, that the inventors of this coast have cause for just pride in the possession of so able a medium as DEWEY & Co., through which they may obtain justice at the Patent Office.

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Genuine Norway Oats, raised on hill land, by one of the proprietors of this journal, can be had at this office.



Volume III.]

SAN FRANCISCO, SATURDAY, MARCH 16, 1872.

[Number 11.]

Settlement and Development of the Gallatin Valley.

[By our Special Traveling Correspondent.]

"The smoke-wreath curling o'er the dell,
The low—the bleat—the tinkling bell,
All made a landscape strange,
Which was the living chronicle
Of deeds that wrought the change."

The Gallatin Valley, in Montana Territory, is, next to the Great Salt Lake Valley Basin, the most extensive agricultural district of the Rocky Mountains, and is in all respects the peer of the latter as a farming country. Being immediately on the line of the Northern Pacific railroad, which cannot leave it entirely either to the north or south, and will probably traverse it throughout its length of 45 miles. It is beginning to attract much attention on the

diggings at from 25 to 40 cents a pound. But no one thought of raising a crop, though hundreds were toiling from daylight to dark in the mines.

The Earliest Prospectors.

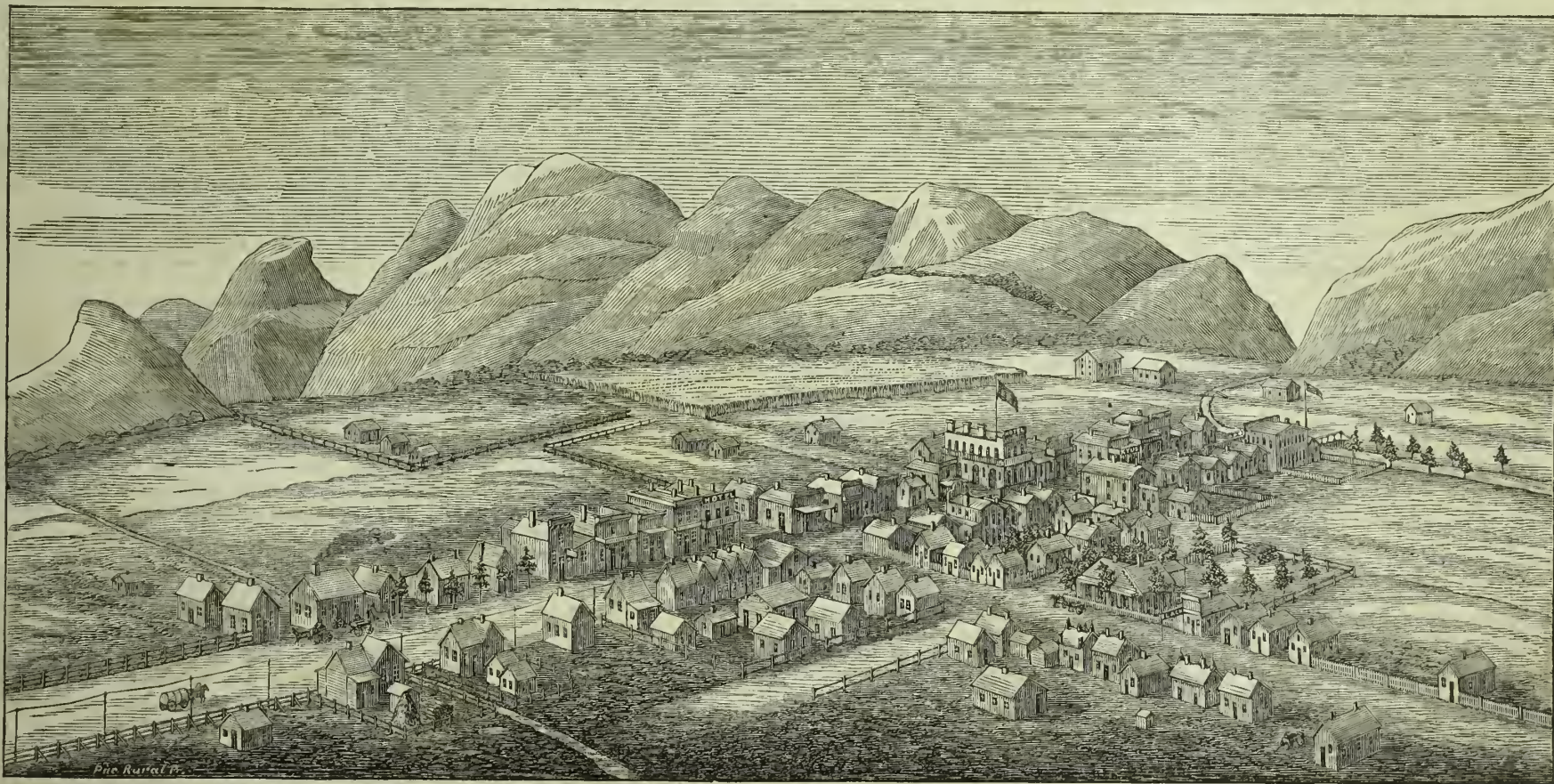
The discovery of the rich placers of Alder Gulch, late in the fall of 1862—the most continuous placer deposits ever developed—brought the restless tide further north and within a day's ride of Gallatin Valley. It and all the adjacent country was over-run with prospectors early the next spring. We may well believe these fortune-seekers were intoxicated with delight as they reined in their "broncos" on the high tablelands, from which they had their first view of the Gallatin Basin, more especially as their travels, so far, had been over rugged ridges and across contracted creek bottoms scarcely extensive enough for a California farmer's calf pasture. Below them, stretching away to the north, the east and the west, and all in plain view through the clear, pure mountain air, was over half a million acres of rank grassed valley

Gallatin valley was next in order. But it was then too late in the season to think of farming in the Gallatin valley that year, though a few plows were improvised, for the occasion and some summer fallowing was done preparatory to the next year's operations; and the spring of 1864 found quite a colony settled around the head of the Missouri, near the mouth of the Gallatin, Jefferson and Madison rivers, and a few farms were also being opened in the upper part of the basin, in the vicinity of the present site of the vigorous young city of Bozeman—now outstripping all competitors in the race for commercial supremacy. Of course there have been special causes to accelerate the development of the Gallatin valley; but without such special agencies her progress would have been steady and healthy, for richness, and extent of soil, desirability of climate, unexcelled facilities of water-power, and forests of noble timber, are among her natural advantages. My task would not be fully performed, however, if I omitted to notice the more prominent influences

demand for lumber, erected other saw-mills in different parts of the valley, the same year. And in the summer of 1866, the capacity of the two grist-mills being found inadequate to meet the increasing demand of the wheat-growers, Captain Reuben Foster commenced the erection of the Union Mills, at Spring Hill, about 15 miles north of Bozeman—a two-story edifice capable of turning out fifteen thousand pounds of flour a day—and the next fall had it in successful operation. Your correspondent paid the Union Mills a visit, and must admit that it is the most complete flouring establishment he entered in his extensive tour through the Rocky Mountains. Under the management of its present enterprising and efficient proprietor, Andrew Pierstorff, Esq., its trade-mark hold its own with the world-famed St. Louis brands—which, in fact, the home productions have almost entirely driven from the local markets.

Churches and Schools.

With the true spirit of the American pioneer,



BOZEMAN CITY, GALLATIN COUNTY, MONTANA.

Pacific Coast and through the Western States. Therefore I am convinced I cannot use my pen more commendably than by giving a history of the settlement of this interesting section, its present condition and prospects.

Though very properly termed the "Granary of the Territory," the Gallatin Valley's present developments are the immediate results of and wholly owing to gold mining. The Pick made way for the Plow. Little attention was given to agriculture in Montana until the spring of 1864, though for two years previous the mining world had been in a blaze of excitement over the fabulous gold discoveries reported from the Upper Missouri, during which time gold-hunters had been flocking to the new El Dorado by thousands. But among them all there was probably not one who intended or expected to till the soil; in the wild pell-mell practical thoughts and calculations were unknown; they had come to dig out a certain quantity of gold, which they would return to enjoy. Four acres of potatoes yielding ordinarily well, would have brought them at that time, the snug sum of six thousand dollars; and an extraordinary yield, such as is not unusual in the Gallatin Valley at this time, would have netted double that amount. Freight from Salt Lake City ranged from \$15 to \$30 a hundred, and potatoes, cabbages, turnips, etc., found a ready market in the new

land,—in gentle undulations it rolled on and on to the distant mountain walls. Since descending the summits that overlook the central plains of Utah, they had seen no region so inviting as a field for agricultural labor, and nowhere a picture of undeveloped Nature so enchantingly beautiful and impressively grand. There, all encompassed by a single sweep of the vision, were three noble currents—the West Gallatin, the Jefferson and the Madison—pouring down to the great basin from opposite directions and winding away with their myriad tributaries, through dense groves of cottonwood, alder, ash and willow, and the most nutritious grasses on the face of the earth, to unite their waters where the flourishing village of Gallatin City now stands, and form the second mightiest river of the Continent.

The influence of such a scene was too strong for even the fascinations of a gold-hunter's life, and projects of carving the lovely wild landscape into comfortable homes happily succeeded, in many instances, the dream of making fortunes in a day through blind luck. A few hay ranches were selected and "staked off" at once—hay then being worth from fifty to seventy-five and even a hundred dollars a ton in the mines—and the locators hurried back to the diggings to prepare to make them available. And a "stampede" for farms in the

which have contributed so much to her wealth and prosperity.

Flour Mills.

In the summer or fall of 1864, the indefatigable Perry W. McAdow, with his mining partner, Thomas Couver, now engaged in agriculture in Los Angeles county, California, located a site for a grist-mill in the upper part of the valley, and had the necessary machinery on the road soon after. This gave an impetus to the settlement of Gallatin valley, just when such encouragement was needed, and the smoke from a score of new farm-houses was curling to the sky within sight of the pioneer grist-mill before its burrs had made a single revolution. In the meantime the energetic Wilson brothers had begun the erection of a large grist-mill in the lower part of the valley, at Gallatin City, 35 miles below the scene of McAdow & Co.'s enterprise, which equally stimulated settlement and development in that portion of the Gallatin basin. Then McAdow & Co., believing the Gallatin valley destined to become one of the most populous farming sections of the great West, (a hope now fully realized) still further manifested their confidence in its future by the erection of a saw-mill, which speedily did away with the "whip-sawing" method.

John Auld, J. J. Tomlinson and others, seeing McAdow & Co. were unable to supply the

the early settlers of the Gallatin valley, notwithstanding their exciting race for material prosperity, ever kept moral agencies in view, and the church and school received their first attention as soon as the family hearth-stones had been securely laid. Thenceforward immigration, still increasing, was made up largely of families, so that by the fall of 1866 the population and wealth of Gallatin county—now regularly organized—made her a power in the Territorial Legislature and in general business circles, and the Gallatin valley was universally admitted to be one of the safest fields for permanent investment.

Indian Troubles.

But, as might have been expected, some adverse clouds shadowed our infant empire. To the eastward, just beyond the dividing range between the Yellowstone and the Gallatin, was the fierce and powerful Crow tribe of Indians—since, under a benign and wise policy on the part of the general government, elevated to semi-civilization—and their depredations were very frequent. And danger was more imminent in the upper part of the valley—the most populous section—from the fact that Bozeman City is located in the very mouth of a low pass leading to the wide-dried valley, as our cut shows, whilst 7 gals. of 50 gal. by any mode,

CORRESPONDENCE.

Notes of Travel in Yuba County.

[By our Traveling Correspondent.]
Marysville,

The county seat of this county, is situated about 40 miles distant from Sacramento city *via* rail, not the shortest, but the only route by which your city is reached at this writing; the railroad *via* Knight's Landing and Davisville, being completely submerged in places. This city contains about 6,000 inhabitants, has two first-class hotels, the "Western House" and "Dawson House," and in a manufacturing way, is second to none of its size, in the State.

Best & Brown's "Separator"

Is manufactured at this place, the patent upon which was obtained through your office. The proprietors of this separator are at present only manufacturing models, for the purchasers of county rights; 14 men are regularly employed and \$20,000 worth of county rights have been disposed of within the last 30 days. It is a portable machine, costs \$500, and has a capacity of cleaning 60 tons of grain, or seed of any description, daily; it is especially adapted for cleaning barley for brewers, castor beans, etc.; if a half dozen kinds of grain be mixed, it will separate each, in a different sack. So highly pleased were the Japanese with it, (when they visited this city a few weeks since) that they propose to introduce it into Japan to clean rice with. I am satisfied it is a fortune to its owners.

Eureka Gang Plow.

Hill's patent is another of the important manufactured articles of this city. Messrs. Hill & Knaugh, proprietors, are at present working a force of 20 men in the manufacture of some half dozen kinds of single gang and sod-plows. The Eureka sulky plow, a double gang, all iron except the pole, is manufactured at \$95 each; with chilled cast-iron points at \$85; the Champion deep-tilling stubble plow at from \$85 to \$90. They also manufacture a sod or tule plow on trucks, with seat for driver, at from \$80 to \$90. Several I saw in use, gave entire satisfaction; their plows for gravelly ground (especially made) are a great success.

Doors, Windows and Blinds.

One of the largest establishments of this class of articles anywhere in the interior of the State, is carried on at this place by Messrs. Swain & Hudson; they do a general turning and scroll-sawing business in addition, and at present are employing 50 men. Their manufactory is situated on the corner of First and D streets.

Guns, Rifles, and Pistols.

Some of the most extraordinary, and I am credibly informed, the most effective weapons, manufactured on this Coast, emanate from the establishment of B. Biglow, 95, D. street, Marysville. The celebrated "Kit Carson" carries a seven shooter repeating rifle, made by Mr. B. since his residence here. As it may be of some interest to the sporting, and target shooting readers of the Press, I will mention a few kinds of weapons made by Mr. B.—together with the prices charged. Common hunting rifle from \$25 to \$100; target rifles, from \$45 to \$200; seven shooter repeating rifles from \$100 to \$200, after the Billingshurst patent, with rifled cylinder; double-barrelled rifle, one above the other, from \$65 to \$150; shot gun and rifle combined, from \$50 to \$120.

Scirpus Lacustris.

S. D. Baldwii, jeweler, of this place, has lately patented through your office, and claims the right of manufacturing paper and other fabrics from the above named substance, which is common tule; it grows from 3 to 12 feet high, has an outer fibre, and an inner pulp. The specimens shown your correspondent, have a staple equal to the best cotton. With the immense acreage of tule in California—should this enterprise prove what is claimed for it, cotton will no longer be "King."

Buckeye Flouring Mill.

At this place, A. D. Starr & Co., proprietors, is run by a steam engine of 120 horse power; it has 6 run of burrs, a storage capacity of 1,500 tons, and a capacity of making 250 barrels of flour every 24 hours; 15 men are regularly employed; the machinery used is cog-gearing, and to prevent "backlash," one of Logan's patent Rubber Backlash Springs is attached to the burrs; it gives perfect satisfaction at this mill, and they inform me, completely takes off all "backlash."

The principal articles put in at the mill are stoves, tin,

sheet-iron, pumps, copperware, hardware and glassware, is E. L. Ross & Co., No. 66 D street.

Messrs. Bell & Garrett, are the wholesale and retail grocers of this section, and deal in everything appertaining to that line of trade, making it the chief head quarters for farmers for miles around.

Nevada Stage Co.,

Running between Marysville and Nevada, daily (Sundays excepted) is satisfactory to the traveling public; the distance is 40 miles, fare \$5. On the route you pass Timbuctoo, Sucker Flat, Smartsville, Rough and Ready and Grass Valley. Messrs. Chas. Sherman and John Bordwell are proprietors. L. P. Mc.

Our Pacific Coast Islands.

EDITORS PRESS:—In your issue of Dec. 23d you asked for information relating to the islands and other lands on the southern coast of California. I have waited until now in the expectation that some one, better informed on this subject, would have given the information desired.

There are Six Islands

South of Point Conception; three of which, Santa Cruz, Santa Rosa and San Miguel, lying south of and near the coast of Santa Barbara county, varying in length from ten to thirty, by an average width of about five miles. Further south, on the coast of Los Angeles county, are Santa Catalina, San Clemente and San Nicolas, about equal in size to the three above mentioned. All of these islands are fully stocked with sheep and are, I believe, held by various parties under Spanish grants. They are all hilly and even mountainous, with little or no land suitable for cultivation. Some of the larger ones have springs and small streams of fresh water; but most of them have no fresh water upon them at all; but all are stocked with sheep, which are not herded, but permitted to take care of themselves except when they are corralled for the purpose of shearing or drafting for sale.

It is a singular fact that the sheep do just as well on the islands destitute of water, as upon the others; the fogs and dews supplying all the moisture they receive. Although the expense of herding is avoided, the sheep become so wild that a large force is required to corral and handle them upon the occasions when it is necessary to do so, and it is quite probable that when herded on good pastures on the main land, the profit is greater; and certainly persons who wish to breed fine sheep and make fine wool, would infinitely prefer the latter.

On the Main Land,

The quality of our pastures is much superior to that on the islands, and investments there will increase more rapidly in value, as there is always a considerable proportion of the lands on our large ranches suitable for cultivation, which as the population increases will become valuable as farming lands. Some large fortunes have already been made in this way from ranches purchased originally for sheep ranges; and there are yet many valuable tracts for sale, at from one to four dollars per acre, varying in size from five to fifty thousand acres. To give an idea of

The Quality of Our Winter Pastures,

I will state that at the present time the grass on the hills and uplands is from one to two feet high, and will continue green and growing until May and June, after which it dries into the finest natural hay in the world, and is then far better for fattening stock than when green.

There are thousands of acres of valley lands on the Stearns ranches, near this town, that if sown with alfalfa would support ten sheep to the acre, furnishing abundance of green feed throughout the year without irrigation, as these lands are underlaid by an unfauling supply of water at a depth of from four to eight feet from the surface, a depth easily reached by all strong rooted plants.

These are the lands upon which the semi-tropical fruits flourish, and although now selling at from \$15 to \$25 per acre, will in a few years become immensely valuable. Eight inches of rain has this season completely saturated these lands with moisture. Early sown grain is growing so rank that it has fallen flat upon the ground, and is being mown to allow it to grow up again. With eight inches of rain any other part of the world would be a desert; ten with us is a full supply.

Yours truly, Wm. R. OLDEN.
Anaheim, Feb. 28, 1872.

Silk Worms—Report Experiments.

EDS. PRESS:—Since my connection with the California Silk Manufacturing Company, dating from 1870, I have given the subject of silk culture much attention, thought, and study, and I am now thoroughly convinced that it is only a question of time when California will produce sufficient raw silk to supply several such manufactories as the one we now have in operation, and of a quality equal to the Japanese, which is superior as a general rule to the China silks. The experiments already made fully demonstrate the adaptability of our soil and climate to the growth of the mulberry and perpetuity of the silkworm; but in order that the raising of the worm should at all times be a success, proper care should be observed in the selection of localities. We find different soils and localities produce different wines from the same variety of grape. We also find some sections will produce an article of tobacco nearly equal to the best imported, and elegantly adapted to the manufacture of cigars, while others, grown from the same seed in a different locality, produce an article so rank and strong as to unfit it for plug or chewing tobacco. So it is in regard to the various varieties of fruit. Some sections will produce the orange, lemon, fig, and many others of a tropical clime, with all their original lusciousness of flavor, which proves that we have within the boundaries of California so great a diversity of climate that every variety of fruits, cereals, shrub, plant, or flower can here find some place to adapt itself. As the business of silk culture is in its infancy, and has yet many difficulties to encounter, the first of all things connected with it should be to ascertain the most desirable locality for the feeding of the worm; taking it for granted that the soil, with the exception of the low bottom land, is everywhere adapted to the growth of the mulberry. In order to ascertain this fact definitely, I would suggest that your many correspondents from the different sections of the country make known their experiments in the raising of the worm, through your valuable paper, from which conclusions could be arrived at, of the proper localities to embark in an enterprise fraught with so many benefits to our country. G. E.

San Francisco, March, 1872.

Agricultural Appropriations.

EDITORS PRESS:—I noticed in your issue of Feb. 24th, under the head of a "Good Act," that you seemed to think the Senate did wisely in passing the act to appropriate moneys for various agricultural purposes. Perhaps it is right, but I cannot see it in that light. I hold that each society or organization ought to support itself, without drawing on the public funds. Agricultural societies are all very well, but we don't want to be taxed here, to build up somewhere else. When we go to an agricultural fair we must pay our entrance fee promptly. I suppose the money goes to pay expenses and premiums. But the last thing I would have thought of the Legislature doing, would be the granting of an appropriation to a manufacturers' association of wine and brandy. I would suppose that a manufacturing company would know whether it would pay or not, before organizing, and especially the wine and brandy business. They ought to know that they had a sure thing without drawing on the public treasury.

My boy attracted my attention to the article and wanted to know why public officers use the peoples' money to assist in making wine and brandy? It may not pass the Lower House, but I fear it will.

The bill was passed in the Assembly by a vote of 38 to 27.—[Ed.]

One thing is certain, if our excellent Governor sanctions the measure, he loses one vote next time sure.

Now would it not be well while the appropriations are being made to extend them a little further, and grant to each county where wine and brandy are manufactured, say \$10,000, for the sole purpose of building a poor-house for the destitute and poor, made so by drinking to excess the wine and brandy that is manufactured with the States' money in our midst? We will all want more jail room and penitentiaries of course. Would it not be well for our assessors when they commence work this spring, to be instructed to inform us what we are taxed for, say a certain per cent. for agricultural purposes and the per cent. for wine and brandy purposes, and the per cent. for building poor-houses and penitentiaries for wine and brandy drinkers? We farmers want to know what our light

taxing (?) is for, and we will pay it cheerfully, as a law-abiding people should do. Healdsburg, March 17th, 1872. A. C.

Gypsum for Wheat.

EDS. PRESS: "Farmers, write for your paper." All right, here goes. Your correspondent, "Seer," last week, says he is knowing to a farmer in Sonoma sowing gypsum on his land and harvesting therefrom 70 sacks per acre of wheat. He adds that the berry was very plump! Not to be rude, but to be as plump as the berry in regard to the truth, we confess that we do not believe it. The Press prints some big stories, which we attribute to the humor of the writer and the credulity of the Press, and we let them pass. But this one is worthy of being ventilated, as we might wish to lay by a stock of gypsum, before it goes up out of our reach.

He says that the adjoining ranch without gypsum, yielded 25 sacks. Seventy sacks is 116 2/3 bushels per acre of wheat. Twenty-five sacks is 41 2/3 bushels per acre, making a difference of seventy-five bushels or four thousand five hundred pounds per acre, between gypsum and no gypsum. We do not question the 40 sacks, as last season in one or two instances, we harvested that amount without gypsum; but that has nothing to do with the question, beyond showing us what might have been, had we sown gypsum.

Not wishing to be considered as officious, or as meddling with what does not concern us, we would like, however, to know the name of the Sonoma farmer? in what part of Sonoma the farm is? what kind of soil did he sow the gypsum on? How many acres did he sow? How many years has wheat been raised on that land? and what did it yield last year without gypsum? What did his gypsum cost him per acre, that made a difference of four thousand five hundred pounds? (this is the dollar and cent question). Does he intend to sow all his wheat land with gypsum this year?

These questions definitely answered, would do more to enlighten the uninitiated in regard to the wonders of gypsum, than a score of squibs that so and so has been creating such havoc in the general idea as to the fitness of things. If farmers when sending their production or account of the same to the papers, would give all the particulars in regard to cultivating soil, locality, etc., they would be conferring a benefit, instead of setting a body cudgeling his brains as to how the thing was done. Sensational items are good food for the daily papers, but in a farmers' paper, such as the Press, when they are dished up with our regular weekly meal, we would be pleased to have them served so as not to have us suffer from indigestion. G. W. T. C.

San Gregorio, March 4, 1872.

Good! That's what we mean by "Farmers, write for your paper." We want them to "talk right out in meeting." Our correspondent "Seer" did not see the grain growing, or after it was grown. But he had the statement from a credible person who used gypsum on his land. We now request "Seer" to send for a statement direct from said Sonoma farmer. It is, however, safe to premise that the word "bushels" should be substituted for "sacks" in "Seer's" article, or those sacks must have been small ones.

Encouragement—"The No-Fence Law."

The cultivated area of California is rapidly expanding from various causes, one of which is shown in the following:

EDITORS PRESS:—Hungry hollow is the name of a small valley on the north side of Cache creek, in Yolo county; it is a very pretty valley, but not a very nice name. It commenced to settle up four years ago and now there is a large settlement. A very large sowing of grain has been put in this season; there are three men in this valley that have put in fifteen hundred acres of grain each, and quite a number have five or six hundred acres each, and a large number with a less amount. Our wheat and barley looks very well. The large amount of grain in this valley this season, is all owing to our having the benefit of the "No-Fence Law;" this law gives a poor man a chance to get a start; he can take a pre-emption or homestead claim, and if he can build him a hut, he may go on and get in a crop of grain without a fence, for men here now have to take care of their stock or else pay the damages. J. M. D.

MECHANICAL PROGRESS.

Contact of Belts with Pulleys.

Until a comparatively recent date the practice has been general of putting the rough side of a belt to the pulley and, the suggestion that the smooth side would give more capacity for transmitting power has been received as an innovation of doubtful utility. Recent experience has shown that, aside from the incidental circumstance that the belt will be less liable to crack if the grain side is applied to the pulley—the strain being thus thrown upon the outer or flesh side, which has the greater elasticity—the difference in the amount of available tension obtained is so great as to be very distinctly manifest when the two methods are compared in actual trial.

The fact has also been deduced that a leather belt, with the dressed side to the pulley will sustain one-third more tension without slipping than if the flesh side is applied. If the belt is required to transmit the utmost amount of power which can be applied without causing it to slip, this difference becomes an important item; and in a certain degree it will always have its effect upon the working capacity of the machinery.

There has long prevailed in some quarters an impression that the rough side of the belt will take a firmer hold upon the pulley. But it is not only important that the belt should hold snugly to the pulley while in contact—it is equally essential that it should be released with perfect ease when it leaves the pulley—there should be no impediment to the passing off of the belt. This difficulty has often been exemplified in attempts to improve the action of the belt by applying adhesive substances which cause it to stick to the pulley. The "traction," it is true, is increased by this means, but the sticking of the belt is an obstacle to its free motion, and it is found to have less effective power than before.

What is wanted to secure the best results in the use of belting is the greatest possible smoothness both of pulley and belt, resulting in the closest attainable contact between their surfaces; and to this end it is obviously expedient to put the dressed side of the belt to the pulley. The effect is still further and very greatly improved by covering the pulley with leather, the increase of the resistance to slipping thus obtained being stated by some experimenters as high as fifty per cent.

It is said that a belt will sometimes carry so much air with it when in very rapid motion that it actually *rides* the air instead of the pulley—in other words, that a continuous current or belt of air is drawn in and interposes itself between the pulley and the band, the latter losing its contact and becoming entirely detached from the pulley. This is advanced as the reason why a belt running at high speed requires greater tension to prevent it from slipping than when the speed is less. But the air theory is not a tenable one, except, perhaps, in a very limited sense. The cause of the separation and slipping of the belt on the pulley is nothing else than the centrifugal force of the belt which tends, of course, to throw it outward, and requires to be checked by a corresponding degree of tension.—*Con. from Leffel's News.*

GERMAN PRIZES FOR IMPROVEMENTS.—The "Verein zur Beförderung des Gewerbebefleisses" offers several prizes for a durable plaster on brick walls; for a method to determine the valuable constituents in aniline oil; for an opaque red enamel on gold, silver, and copper; for a method to make lenses for optical purposes without grinding or polishing; for a treatise on the composition of cements; for treatises on the manufacture, formation, and constitution of coralline (aurine, proline, rosolic acid) for the preparation of a soft yellow solder.—*Dingler's Poly. Journal.*

STEEL-HEADED VS. STEEL RAILS.—The chief engineer of the Philadelphia and Reading railroad condemns the use of the so-called steel-headed rail, on the ground that the steel head is found to separate from the body—a difficulty not yet overcome by a peculiar arrangement of the pile in rolling, which had been intended to obviate it. Of all this class of rails laid on the main track of this railroad since March, 1869, over 25 per cent. have been removed. The solid steel rails, on the contrary, have uniformly proved satisfactory, showing but little wear, after a service of about four and a half years.

Hooping Boiler Flues.

A practice was introduced in England some ten years since, under the sanction of the Manchester Steam Users' Association for the application of encircling hoops to the furnace tubes and flues of boilers originally made without such hoops. The object is either to admit of their working pressure being increased, or to render them safe at the one to which they have been subjected.

The Association after carefully noting the effect and utility of such practice for some years, at a late meeting issued a circular fully confirming their utility, and offering some suggestions as to the mode of application, etc., which are so thoroughly practiced that we give the substance of the circular as follows:

Mode of Application.

The greatest care should be taken in their application. The hoops should not be made of flat, but of angle iron. About 3 in. by 3 in., by $\frac{1}{4}$ in. is recommended. They should be made in halves so as to be passed in at the man-holes, and riveted to the tubes or flues in position.

The hoops should be secured to the flues by rivets, but not brought into direct contact with the plates of the flues. A space of an inch should be left between the hoop and flue for the free circulation of water, else the plate will become overheated and crack at the rivet holes. This is accomplished by inserting between the hoop and flue a short piece of tube or ferrule, through which the rivet may pass loosely. Blocks of iron with holes punched in them, forming a clumsy washer, have sometimes been used, but they are objectionable. The ferrules are best made of three-sixteenth iron cut and welded. They should be placed about six inches apart, and nicely adjusted so as to give a solid abutment for the riveting.

The use of these ferrules or washers has sometimes been avoided by constructing the hoops of two pieces of angle iron placed back to back; but they are not found to work well. The opposite halves of the hoop should be carefully welded and drawn together and connected by butt-strips, riveted to their ends on the backs; much depends on the hoops being made one with the flue. They should not be allowed to touch the shell of the boiler, or the flues may become strained and leakage be induced—as the furnace tubes rise and fall with the variations of the temperature, and thus grind against the sides of the boiler or one another, if allowed to come in contact. Where space requires it, a portion of the flange of the angle iron may be cut off to prevent contact. It is recommended that in every boiler of ordinary dimensions at least one hoop should be placed upon the flue about five feet from the front, to guard the flue against strain from the action of the fire. If two are used, the second should be placed a little beyond the middle from the front. With increasing numbers always bear in mind that the amount of strain decreases as you approach the rear of the boiler.

In cleansing out the boilers the annular spaces between the hoops and flues should always be carefully attended to.

CONVEYING POWER OVER TELEGRAPH POLES. The large establishment of James Richmond, at Lockport, N. Y., the well known maker of grain cleaners, is driven by water power from the waste of the Erie canal. Mr. R. also supplies a considerable amount of power to other establishments, some of which are over half a mile from his water wheels. This he does by means of endless wire cables, carried on telegraph poles, to neighboring factories and mills. A very simple arrangement of cogs enables any number of endless wire cables to run to central points in the city, and thence in all directions. In this way, the printing presses of the *Journal*, the *Times*, and the *Union* are run at a small cost per annum. Mr. Richmond also furnishes power to a whip factory, a cabinet shop, a glass factory, 2,500 feet away, a shirt factory, 2,000 feet in the opposite direction, a foundry, and a machine shop. He has some valuable patents in connection with this distribution of power, and has lately fitted up a series of distributing wires at Fulton, in Oswego county.

THE DANKS FURNACE.—Much interest continues to be felt in the success of this invention on both sides of the Atlantic. The Cleveland people are very much excited over it; and if the reported success is maintained, it will soon do away with all ordinary puddling furnaces in that vicinity. It bids fair to rival in importance even the Bessemer steel process.

SCIENTIFIC PROGRESS.

Do Plants Derive Their Carbon From the Earth?

This is a question of as much practical value to the agriculturist as of scientific interest to the student of Nature; and Messrs. Laws & Gilbert, the eminent agricultural experimentalists of England have quite satisfactorily solved the question in the negative. They have discovered that, taking the average of seventeen years, the gross amount of produce removed from one acre of continuously unmanured land, in the case of wheat, was 2,434 lbs., and that when from this gross produce they subtracted the amount of water it contained, and of ash which it yielded, there remained 1,963 lbs. of dry organic matter; and when they came to analyse these 1,963 lbs. of dry organic matter, they found them to contain 880 lbs. of carbon. And this, it should be borne in mind, is the average produce of seventeen years' continuous growth of wheat on land to which nothing whatever was added.

Now to a similar strip of land the same experimentalist added every year a certain quantity of mineral matter, corresponding to the ashes yielded by each successive crop removed; and on the strip so treated, the amount of gross produce was found to be increased from 2,434 lbs. to 2,912 lbs. the amount of dry organic matter to be increased from 1,963 lbs. to 2,347 lbs., and the amount of carbon to be increased from 884 lbs. to 1,052 lbs.

To another slip of land they added year by year exactly the same quantity of mineral matter, and in addition a considerable quantity of ammonia salts—the ammonia salts and mineral matter being alike absolutely free from carbonaceous organic matter. And in the case of this strip, they found that the amount of gross produce was increased to the surprising extent of 6,394 lbs., while the amount of dry organic matter was increased to 5,149 lbs., and the amount of carbon to 2,308 lbs.

These results are fully as high—in most cases, indeed, somewhat higher—than are results obtained on a fourth strip of land, supplied year by year with an abundance of farm-yard manure, containing not only the mineral matter, and ammonia added to the third strip, but rich also in carbonaceous organic matter.

Professor Odling says it is inconceivable, then, that the plant should acquire its carbon from these organic matters of the soil, seeing that the amount of carbon in the crop may be increased twofold, and in some cases nearly threefold, by adding to the soil substances, such as mineral salts and ammonia, which are entirely free from organic matter. Is it inconceivable, too, that the original humus in the soil could furnish the carbon contained in a succession of crops for seventeen years consecutively.

RUPTURE OF IRON WIRE BY A BLOW.—As the result of a series of investigations upon the rupture of iron wire by a blow, Mr. John Hopkinson comes to the following conclusions:

1. That if any physical cause increase the tenacity of wire, but increase the product of its elasticity and linear density in a more than duplicate ratio, it will render it more liable to break under a blow.

2. That the fracture of a wire depends on its length, its support, and the method of applying the blow.

3. That in cases such as surges on chains, etc., the effect depends more on the velocity than on the momentum or *vis viva* of the surge.

SULPHIDE OF BISMUTH.—Bismuth in the presence of or in combination with sulphur, yields a beautiful red coating, when passed before the blowpipe on a large piece of charcoal, up the addition of a little pulverized iodide of potassium. A finely pulverized mixture of equal parts of sulphur and iodide of potassium is best kept for such purpose and makes an excellent test material for bismuth. In making these investigations, V. Kobell met a green mineral which occurs associated with joseite at St. José di Madureira, Brazil, and which proved to be bismuthite, not previously noticed at that locality.

PRINTING ON GLASS.—Type made of an elastic material is used, and printing ink, with which is mixed fluoride of calcium. The glass thus printed on is then heated, to a suitable temperature with sulphuric acid, and, having been washed with water, it exhibits in indelible engraving the figures of the type.

On the Melting and Regelation of Ice.

Professor Bottomley, of Glasgow University, describes in *Nature*, some curious experiments of his on the apparent plasticity of ice. In a recent lecture to his class, he placed a lump of ice as large as an apple on a piece of wire gauze, and on this a board, weighted with 12 pounds. Before the conclusion of the lecture, a considerable quantity of ice was found on the lower side of the gauze, firmly united to that above, though apparently forced through the meshes, in a room at 15 C. In a second experiment he placed a block of ice on two parallel boards near together, passed a loop of wire over the ice and hung weights on the ends. Various sizes of wire were tried, and in the final experiment, a wire 0.1 inch in diameter was used, weighted with 56 pounds. It passed entirely through the block of ice, and fell upon the floor; but this block of ice, though the plane of passage was clearly marked, was not divided, nor could it be split in this plane with a knife and chisel.

This remarkable result he explains to be a consequence of James Thomson's theory of regelation, as follows: The stress upon the ice, due to the pressure of the wire, gives it a tendency to melt at the point in contact with this wire, and the ice, in the form of water intermixed with fragments and new crystals, moves so as to relieve itself of pressure. As soon as any portion of the mass is thus relieved, freezing takes place throughout it, because its temperature is reduced below that of the freezing point of water at ordinary pressures, by melting of contiguous parts. The obvious tendency of the ice under the pressure from above is thus by a series of meltings and refreezings to allow the passage of the wire and yet remain a solid block.

TEMPERATURE OF THE SUN.—Various theories have been adduced to determine the temperature of the sun. Zöllner has recently suggested the following:—"Starting from the fact of the eruptive nature of a certain class of solar protuberances, he thinks that the extraordinary rapidity with which these red flames shoot forth proves that the hydrogen of which they are mainly composed must have burst out from under great pressure; and if so, the hydrogen must have been confined by a zone or layer of liquid from which it breaks loose. Assuming the existence of such a layer of incandescent liquid, then applying to the problem the principles and methods of the mechanical theory of gases, he arrives at the conclusion that the difference of pressure needed to produce an explosion capable of projecting a prominence to the height not unfrequently noticed, is 4,070,000 atmospheres. This enormous pressure is attained at a depth of 130 geographical miles under the sun's surface. In order to produce this gigantic pressure the difference in temperature between the inclosed hydrogen and that existing in the solar atmosphere amounts to 74,910° C. In a similar way Zöllner calculates the approximate absolute temperature of the sun's atmosphere, to be 27,700° C.—a temperature about eight times as high as that given by Bunsen for the oxyhydrogen flame, and one at which iron must exist in a permanently gaseous form."

MANUFACTURE OF BRANDY FROM SAWDUST.—Some years ago Braconnot discovered that grape sugar could be obtained by boiling cellulose with dilute acids, but Professor S. Steuberg was the first to introduce the manufacture of brandy on a practical scale in this way. In February last C. G. Zetterland, of Hulda, made several experiments in preparing brandy from the sawdust of fir and pine. We condense his description in the *Arbeitsgeber*: Nine cwt. sawdust (holding considerable water) were boiled with 0.6 cwt. hydrochloric acid (sp. gr. 1.18) and 30.7 cwt. water. After 8½ hours the mass held 3¼ per ct. grape sugar and after 11 hours 4.38 per ct. A larger percentage than the latter was not obtainable. The acid in the mass was neutralized with lime, the mash cooled to a temperature of 30°, and the yeast from 20 lbs. malt was added. The fermentation was finished in 96 hours. After distilling there were obtained about 15½ gals. (English) of brandy of 50 per ct. at 15°, free from any smell or taste of turpentine and of good flavor. The experimenter thinks it probable that the manufacture of brandy can be carried on successfully on a large scale after experiments have shown the proper method of the details. As air-dried saw dust contains about 80 to 85 per ct. cellulose, if it were possible to transform all this cellulose into grape sugar, each cwt. of air-dried sawdust would yield at least 7 gals. of 50 per ct. brandy.

[Continued from page 161.]

winter and summer; consequently the majority of the settlers were kept in a state of constant uneasiness and alarm, knowing that any hour an incursion in force might take place, the result of which would certainly have been massacre and destruction of property throughout the settlements.

This perilous state of affairs continued until the spring of 1866, when Col. John Bozeman—in whose honor the metropolis of eastern Montana was named—was horribly murdered by Indians within a day's ride of the settlements, and another prominent citizen who was with him, made a hair-breadth escape. The survivor's horse was not yet cool after his arrival at Bozeman, when reliable scouts came in with the alarming news that the ferocious Red Cloud and his blood-thirsting followers were marching on the settlements with the intention of murdering all the whites, running off their stock, and giving to the flames all their improvements. And that these fearful threats would have been carried into execution, had it not been for the protective measures immediately inaugurated by acting Governor Thomas Francis Meagher, there cannot be the slightest doubt, for Red Cloud was really coming. As it was, the effect was disastrous enough; business, in all its branches, was paralyzed, and those having families abandoned their homesteads and fled for their lives. The call of the executive for troops was responded to promptly and with enthusiasm in all parts of the Territory, but for a while it was feared the protective movement would utterly fail and the valley be given over to rapine and destruction, owing to the general unwillingness on the part of the merchants to advance supplies. At this critical juncture it was that Col. Leander Black, a capitalist of rare sagacity and enterprise, and a humanitarian in the fullest sense of the word, came forward and made himself the savior of eastern Montana.

Our Illustration.

The surveyors have been through the pass shown at the right of our cut and it is considered the best route for the Northern Pacific R. R. The mountains in the vicinity of the town are rough and precipitous, but the valley is covered with fields of grain. At the mouth of the pass is situated Fort Ellis, erected there some time since. The buildings are substantial, the lumber from which most of them are built being abundant near by. The flour mill is seen a short distance this side of the mountains. Besides the hotels, which may be recognized, the stores and public buildings are on Main street. The residence of Col. Black, on Black street, is the house surrounded by trees, in front of which stands a horse and buggy. W. H. M.

(To be continued with other illustrations.)

Price of Wool.

From *Walter Brown & Son's Monthly Wool Circular* for Feb., 1872, we make the following extracts:

In recording the course of the Market during February, we again note a further advance in nearly all descriptions of Wool. The month opened with continued activity and hardening prices, and so soon as it was ascertained that, at the London sales, which commenced on the 8th ultimo, a further rise had occurred, a corresponding advance here became a settled fact; and later advices from England served to establish a still higher basis of values.

The high prices prevailing in the markets of the world has drawn out all the available supplies, notwithstanding which, the fact is clearly apparent that there is a large deficiency, to meet which, we have the alternate of drawing from foreign sources by paying a little more than the foreign manufacturer, or by checking consumption through the means of a lessened production of woollen goods.

From our European advices, we find that the situation is disconsolable in a cheerful tone, and no intimation is made that any branch of manufacture is unprofitable. The advance in the raw material is regarded as quite legitimate, and which, it is concluded, will be maintained for some time to come.

In regard to our own approaching clip, it seems very probably that higher prices will rule than many are now willing to admit. Contracts for wool on sheep's back have been made in several of the Western States, on the basis of 65c. to 70c. for Ohio washed wools, and we learn that growers are not eager to dispose of their clips at these rates. Already considerable excitement is said to exist.

Pulled Wools.

The demand for desirable pullings has fully kept pace with the supply, at steadily advancing rates, and choice parcels are now held in the neighborhood of 90c. Stocks are quite moderate.

California Wools.

Fall clip is now about the only quotable description of the wools. They are in better favor, and are moving moderately at prices asked a month since. The demand is chiefly for consumption. Stocks are fair. Contracts for spring clip on sheep's back have been made in California, as well as in Ohio, at prices relatively as high as those in the latter State.

Foreign Wools.

During the month an advance of from 8 to 10 per cent. has been realized on Cape wools, and heavy transactions made at current rates. The stock is much reduced, and is generally of an inferior quality.

Large sales of Australian to arrive here have been effected, and we learn that upwards of 65c. gold has been obtained for choice parcels.

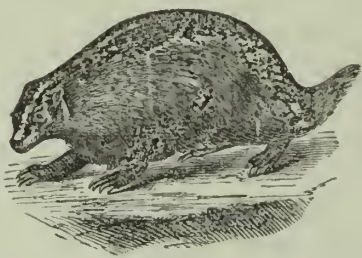
The Badger.

The badger is a clumsy animal, with short, thick legs, and is nearly related to the bear. It is of the genus *meles*, and is found in Europe, Asia and North America, and is sometimes called the ground-hog. It is indolent, solitary, sleepy, and generally considered a stupid animal, feeds mostly on vegetables, and by night. With its powerful claws it excavates deep and commodious burrows, in which it remains during the day time. He seldom leaves his retreat at all during the severe winters of the north.

The word badger is from *bloda*, the Latin for corn. This animal was called *bladarius*, by the Latins, because he carried away the corn from the fields of the farmers. So in every land, one who buys corn in one place and carries it to another to sell is called a badger.

The traveler on the wide prairies of Nebraska, Iowa and Kansas, and along the great thoroughfares of the Rocky mountains, often meets the burrows of this animal. He is also found occasionally on the Atlantic Coast as far north as Labrador, which has given its name to a species of this animal peculiar to that locality.

The badger sometimes leaves his retreat in the day time. A traveler on the west-



ern plains relates the following incident:

"We once surprised as many as five in a single day—two of them in company, as if upon a journey. We kept them before us for more than three miles—whenever they attempted to escape, we would rush upon them—when they would turn and fight most savagely—retreating backwards and contesting every inch of the ground in the retreat; and often rush at horse, man and dog in so determined a manner—that we were obliged to fall back—as we did not wish to kill them. After more than three miles fighting and retreating, they seemed to be in the latitude of home—as they made a sharp turn to the left, and came near reaching their burrow; but were killed not a rod from its mouth. From this circumstance as well as many others under our observation, we are led to believe that the badger is given to making visits to far distant friends, or is sometimes of a wandering disposition."

The badger can live many days without food or water; and even at the end of a three weeks fast has been known to give a most determined fight to a dog. The one which we have chosen for our illustration is one of the varieties peculiar to this continent, and is known as the *melis Americana*.

FINE POULTRY.—We lately looked into the poultry yard of Mr. S. B. Pike, corner of 23d and Capp street, in this city, where we found a choice lot of blooded fowls. Light and Dark Brahmahs; White-faced Black Spanish; Bearded Houdens; Silver Spangled Hamburgs, etc. Some of the stock shown is imported; but we were about equally pleased with that of his own raising, especially his Light Brahmahs from imported "Don Juan" and hen "Haidee"—two as beautiful and perfect specimens of this breed as we have ever seen. The success of Mr. Pike in raising blooded poultry on a limited yard area is most remarkable. He has eight or nine pens, which, with their sleeping and laying accommodations do not occupy an area of only about 10 by 12 feet each, yet the poultry is in the most perfect order, and has been kept so even during the present most exceptionally wet winter.

His house and yards are located on a lot not more than 30x125 in size; yet in even this limited area he has demonstrated that poultry can be profitably kept with all the necessary house and yard accommodations included.

HOME AND FARM.

Farm House Chat.

BY MARY MOUNTAIN.

[Written for the Press.]

Doubtless we all prayed for a wet winter, and as it goes on swimmingly we still keep open the "weather eye," and like Capt. Cuttle we "stand by" against the dull lonesomeness that hovers around our country homes.

We were glad when our own little wave of excitement from the broken blockade brought us eastern mail by the armful, and never before was warmer welcome for the honest, crusty *Tribune*, the sturdy *Agriculturist*, the bright and genial *Harper*. For home letters five weeks on the way, they are as precious as in the early times when men stood for hours in mud and rain waiting their "turn" at the P. O.

Looking backward to the Christmas floods, through all those weary weeks when no "real alive" friend could reach our storm-swept mountain home, we find that the gloom of winter has been constantly cheered and brightened by those faithful familiars—our weekly papers; and whenever one came through all braised and wet, it seemed to deserve especial petting, as though some personal peril had been undergone in our behalf. Yet not so in every case, for who would think of petting the *Bulletin*? Ever since its stormy birth, through dark times and bright times, through thick and thin of everything, has it not been our familiar household oracle? Yet not familiar, but ever formidable in its starchiest and best—is it not the impersonation of cold dignity and conscious power? It invites no confidences, and average humanity would as soon whisper tender thoughts to the north pole. But "business is business" and hath no use for tenderness. Let us consider then the fireside companions of a lovable and friendly sort, toward which children reach out hands and say "O, is it the *RURAL PRESS*? Hurra for that! and please let me be the one to sew it and cut it."

Every farm house in the land should have its favorite journal whose welcome is as warm as though it went nowhere else at all, and whose good things are relished with as keen delight as though cut and dried for each special subscriber. In former days I have known a few of those—homes, I had almost said—but they were not home, not farms, just dull, desolate "ranches," as destitute of reading matter as of everything else pleasant and attractive. What listless eyes, what limp and shuffling legs, what drawing slang and profanity betrayed the sluggish current of those unlovely lives! Let us hope those gentle missionaries—the traveling agents—have found them all out and ensured their conviction, conversion and everyday salvation by means of a live paper that shall talk to them heartily, earnestly, preach no abstractions, but hold a mold and brighten their sympathies by force of common sense and neighborly feeling.

In thickly settled communities neighbors become component parts of human existence; but in isolated homes the "spirit of the press" comes rustling in and enters its eternal protest against stagnation.

Ogden Farm is away off in Rhode Island; but the monthly talk that comes to us in the columns of the *Agriculturist*, so clear, so ample, so worth its weight in gold; why it makes the pleasant Col. Waring almost our next door neighbor, and as my uncle Toby beams and brightens, or sighs with envy of that wonderful farming, I can see how he longs to talk back; but the distance is discouraging and the average Californian has much to learn, and unlearn, before he can add a chapter to that gospel of high farming.

Another prime old favorite speaks to us through the same columns—"Walks and Talks," and we always prick up our ears a trifle more briskly when he comes attended by his shrewd neighbor "The Deacon." We know more about their farm work, their modes of thought and action than of any neighbor whose land joins ours; at least we think we do, and upon the strength of it how heartily we could shake hands and assure them we are not strangers although separated by a continent.

Then there is Faith Rochester of the

Agriculturist and Mrs. "Home Interests" of the *Tribune*, well known and dearly loved in thousands of homes where every sentence from their pens is treasured as a bit of pure gold, or a wholesome household cordial. In contrast with these two loving mothers who write from their hearts to all the other mothers, I think of the increasing host of women orators and all their cumbersome and often inharmonious machinery of conventions, clubs, associations and societies. If these public speakers, with their reports, petitions, publications, all and singular, can do half as much good as the two quiet, home-keeping women, let them thank the Lord and take courage; they surely have not lived in vain.

But this is an "aside" and not exactly what I meant to say next in regard to those eastern writers. Each has a certain "style," wise, taking, familiar and a downright emphatic force as of "one who hath authority." And they are in earnest—devoted each to his own pursuit with a zeal and ability that increases with years and ends only with life.

We alas! are still so young, still sowing wild oats, pottering around from this thing to that, mining a little, gardening a little, farming a little or possibly farming big with a failure; then going with a grand rush into sheep, only to sicken of "wool-gathering" and take a bold leap at lumbering, where figures prove that we ought to succeed, but we don't; so we settle mayhap into sweet potatoes or possibly take a fresh start with hogs.

Doubtless we are improving—some of us almost permanent—weary of tossing, we settle to rest.

Now can we clinch realities and feel the joyful rush of hope, zeal, enterprise, all through us and about us, shaping the plan, perfecting the work and tingling to our finger ends as we grasp the pen to tell our fellow laborers all through the State just how the thing is done?

If we cannot do this, right out in the country places where the work is going on, not all the editorial ability in the State will avail to put our favorite "*Press*" at the head of its class and keep it there.

Whatever we would have of wide-awake, original, reliable personal experience and experiment we must ourselves create, or largely assist in the good work. Many farmers who write for advice to the American Institute Club, are told that they must "mix brains" with this, that or the other agricultural formula. Even so must we do; and while the operation goes on, carefully gather the essence of the matter and forward to the columns of the *RURAL PRESS*.

Thus may we come to shine in printer's ink; and after much typographical clipping and polishing, our "diamonds in the rough" may rank as gems of the first water.

Even now the gentle reader notes a growing interest, a steadily increasing number of farmers who write with vigor and spirit.

Reading the *Press* of Feb. 17th, my uncle Toby burst out laughing and declared—"Why, this sounds like old 'Walks and Talks.'" Let E. P. of Santa Rosa stick to his pen (not his "pig pen") and be sure we'll all be glad to hear from him. The same paper has a "Voice from the Country," and Los Gatos seems not so far away as we listen to the breezy "voice" telling of its free, fresh life, outdoors and indoors. That "light literature, *Frank Leslie* and *Peterson*"—is it not almost too light earnest? If you may have choice, try *Harper*, *Scribner*, the *Oregonian*, and tell us next year how you have profited by the exchange.

Messrs. Eds. will not allow contributors to resolve themselves into a mutual admiration society—yet a modicum of personal interest may find occasional indulgence(?) We may solace ourselves with this assurance, if we send an article "unworthy of our steel" the afflicted but forbearing Eds. will kindly and tenderly bury it in the waste basket.

THE WING OF THE LOCUST.—If the tip of the wing of the so-called "seventeen-year locust," is placed under a low magnifying power, there will be seen near the fancied letter W (which has been observed by some with superstition) a beautiful branching, arborescent appearance, which is probably due to certain vessels which supply nutriment to the wing. The branches are transparent, and are based on one of the muscular bands of the wing. They appear to be filled with some granular material. Why they appear only at this one spot on the wing has not been explained.

AGRICULTURAL NOTES.

CALIFORNIA.

CONTRA COSTA.

Transcript, Feb. 5: CLIMATIC CONTRASTS. In Eastern localities, and in parallels of latitude lower than that of Oakland, the people are now enduring intense cold, and wading through snows from six inches to two feet in depth. And this is the month of March, which has come in here as it sometimes goes out there, "like a lamb." The weather in this valley is as genial and bland as on the balmy days of June in the Atlantic States. Fruit trees are in full bloom, the green grain on the hill sides, and the trees of the valley, clothed in their vernal dress, present a striking contrast to the snow-covered fields and leafless shrubbery of the less-favored States east of the Rocky Mountains. Our lots are indeed cast in pleasant places, and right thankful should we be that neither the extremes of heat nor cold ever endanger the health, or disturb the comfort of the citizens.

ORNAMENTAL SHRUBBERY.—Orders from across the Bay come thick and fast for nursery plants of every description. A nurseryman in this city informs us that a great rush is being made for hedge plants and rose bushes.

OUR GARDENS.—If there is any one thing we are proud of above another, it is our gardens. Some of them are already "blooming," and, consequently, attractive and inviting.

NEW INDUSTRY.—Hiram Bruce is about to commence the weaving of rag carpets in this city in the regular old-fashioned style. He will run two looms in manufacturing the carpets: We think there is a good opening for the business in this city—there are certainly rags enough to be worked up.

FRESNO.

Expositor, March 6: WOOL.—The wool question is absorbing considerable attention just now. Agents are traveling through the county buying up, in advance of shearing all that they can. The prices paid range from thirty cents upwards. Some few have sold their wool, but the majority seem disposed to hold on until they shear, anticipating better prices. We think the latter course is by far the more preferable one, as we are fully convinced that the prices of wool will greatly appreciate as the near approach of the railroad will bring about competition between the California commission dealers and the Eastern buyers. For years the wool-growers of this section have been paying tribute to the wool commission merchants at San Francisco and Stockton, without a commensurate return. But the producers are now beginning to realize the true state of affairs, and are refusing to forward their wool to be sold by other parties. This has brought about a considerable competition among the buyers, and considerable increase in prices is finally expected.

We learn that the railroad company has purchased two sections of land on the line of the railroad immediately south of the San Joaquin river, in this county. It is supposed that the company design laying out a town in the vicinity indicated, and already there is considerable talk going on among our business men in regard to moving thitherward. There is no question but a town of considerable importance will spring up at the point indicated as it will be the natural business center in this county.

NAPA.

Reporter, March 9: EASTERN QUAIL IN NAPA.—The California Acclimatization Society, recently had 270 partridges, or Eastern quail, brought out from Missouri, with the hope of propagating them in California. Of the number which started out 70 perished in the snow blockade. Those which arrived safe in this State have been divided up among the various counties. We learn that two dozen are to be turned loose in the lower portion of Napa Valley. On Monday last, Mr. Alex. Badlam passed through Napa on his way to Calistoga, taking half a dozen of these partridges with him to be turned loose in the upper end of the Valley. These partridges are about the size of our common quail, but have no top-knot or feathers on the head, and are of a redder color. Hunters are warned against shooting these birds. It is believed that if they are not killed, that in a few years they will furnish a valuable game bird.

FISH.—Joo Green, on last Saturday, caught a trout in Carneres creek weighing eight pounds. As soon as the high waters cease, fishing will become exceedingly popular. Pleasure parties to the mountains are already being arranged. Alas,

that printers should be cut off from such sports.

SANTA BARBARA.

Press, March 2: TREES BY THE MILLION. It is now certain that nearly a million trees, chiefly almond and walnut, will be planted in this vicinity this year, which is a large number of trees; and yet we are not disposed to modify our statement, that nearly a million of trees will be planted in the vicinity of Santa Barbara this year. One gentleman alone, Mr. O. L. Abbott, will propagate 90,000 trees, mostly almond. Mr. N. W. Winton will have some 40 or 50,000; and many others will have large numbers. In two or three years there will be a million almond and walnut trees in bearing in this portion of the State, many of them being trees from 4 to 10 years old. And still not one-tenth of our farmers are doing anything of account in planting trees. The lowest estimated profit, one year with another, is \$1.25 to the tree, or \$200 to the acre. The true yield is no doubt a third higher, or \$300 to the acre, profit. The full capacity of fully matured groves of almonds, is of course vastly greater, being not less than \$500 profit to the acre. It is safe to say that within three years the income from nuts raised in this immediate vicinity will not be less than half a million dollars.

SAN BERNARDINO.

Guardian, March 2: THE RAIN.—This week has given us an abundant fall of rain. On Friday, of last week, the rain commenced falling and continued, with but slight interruption, until Saturday at noon. Tuesday night again it rained very hard for two or three hours. The effect on the grass and the growing crops is very perceptible and highly advantageous. Truly, the hearts of the farmers are made to rejoice.

SNOW.—The fall of snow, on the mountains, the past week was heavier than at any time during the winter. The San Bernardino range of mountains far down their sides, have been covered with a heavy coat of snow since Friday night of last week, while the high peaks of Mt. San Bernardino, Cucumungo and San Jacinto are covered to the depth of 20 or 30 feet. On the mountain ridges, half encircling our valley, old winter rests its icy form, while in the valley below the meadows, the fields and the hillsides, are robed in the sweetest smiles of spring.

SANTA CRUZ.

Sentinel, March 9: BUSINESS SEASON.—As winter wears away, and the usual season for life and activity, in a business sense approaches, we observe on every hand, a good indication of unusual prosperity. The protracted rains have emboldened men and inspired confidence in the general thrift hitherto succeeding ample rains on this coast. Business in Santa Cruz promises to open up lively. The lumber trade will doubtless exceed the whole business in that line for the past three years, and when our timber trade is brisk everything else thrives correspondingly.

LOVELY SPRING.—It has been ten years since our mountains, hills and valleys have been so profusely overspread with a sward as beauteous as to-day greets the eye on every hand. The cattle on a thousand hills and the flocks in more numerous valleys, reveal already the great blessing this year of extended rain will prove to California. The grain fields present a freshness and growth unknown to former years, and the fruit, so varied in kind, will hardly fail to yield its accustomed, bountiful harvest.

SAN DIEGO.

Flag, March 2: ALFALFA.—The enclosed fields on the flats at Old Town, belonging to Captain George A. Johnson, are sowed with alfalfa and wheat, the latter intended to protect the alfalfa while growing. Both the grain and grass are doing very well, and the prospects for a steady supply of good feed from these fields are so well assured that several Old Towners have expressed an intention to sow alfalfa the coming season.

PLOWING IN THE CAJON VALLEY.—Since the rain of Friday and Saturday last, Messrs. Sublett, Felsenheld & Co., have started several plows on their ranch in the Cajon valley. Three hundred acres more of wheat will be put in, making a total sowed by the firm on this ranch of 2,100 acres. Mr. Sublett says that the rain penetrated the unplowed ground on their ranch to the depth of seven inches, and that it soaked down fully two feet into the plowed ground. He is of the opinion, that the present indications are good for 30 or 40 bushels per acre this coming season.

It is estimated there are about 5,700

acres of wheat sowed in the Cajon Valley thus far this season. The amount will be brought up to fully 6,000 acres before plowing and sowing ceases. All the farmers express the opinion that large crops will be made in the Valley this year, so it is safe for housekeepers to rely on being able to use the favorite San Diego flour before the expiration of the year.

Union, Feb. 22: AGRICULTURAL.—At Balena the small grain is growing vigorously, and has not suffered for want of rain. Both wheat and barley are thriving, more particularly the latter, and large crops of each will undoubtedly be made. The farmers rely on showers of rain later in the season, as they can usually be depended on in that section.

DELICIOUS FRUIT.—The finest strawberries we have seen for a long time, were placed on our table yesterday by Mr. Asher, of Paradise Valley, National Rancho. He tells us that he had much finer fruit than even this, but the little birds have lately been troubling his strawberry patch. The flavor of this fruit was remarkably fine.

TOBACCO PLANTING.—The farmers on Smith's Mountain in this county, have been experimenting in the culture of tobacco for the past two years, and have in every instance found that the soil of their ranches is capable of producing a fair article of tobacco. The seed used was of a variety unknown to the cultivators, but it seemed to adapt itself to the soil readily. A lot of different kinds of seed has been received from the Patent Office, and will be tried and the adaptability of the different varieties noted.

MISSION ORCHARD OLIVES.—Several orders have been received within the past few days from San Francisco by the proprietor of the Mission Orchards for large quantities of the olives pickled by him. Several lots which were lately shipped have sold successfully and caused these additional orders to be sent from San Francisco.

SHEEP GRAZING.—Sheep men say that the grass at present is better than it has been for two years past in our county. When it is considered that this county was a place of refuge during the past dry season for several thousands of sheep from the counties north of San Diego, the force of the statement will be appreciated.

SOLANO.

Independent, March 7: CROPS IN SOLANO. The long continued rains have prevented many farmers from sowing their grounds in Suisun valley. We are informed by farmers that not more than one-half of the land set apart for wheat has been seeded. In some instances, where the ground was summer fallowed, farmers have put in their entire crops; others have sowed one-half, and some not more than one-fourth of what they intended. Discouraged by the wet weather some say they will not sow any more, while others intend to put in seed as late as the 10th or 15th of April, if necessary. An old resident told us that in 1862 he sowed wheat on the 15th of April and harvested a ton to the acre from the ground. The early sown grain is growing finely and looking well. We learn that the thistle is proving a great annoyance to some of the farmers and threatening to injure their crops.

Around Dixon the farmers generally have their full crops in and are much encouraged at the prospect of a fine harvest. The early sown grain fields are very promising in most instances. There are sections of country in the northern portion of the county that are deficient in drainage and are now dotted over with pools of water. Upon these spots the crops will probably be ruined, but, taking the county as a whole, the prospect is most cheering.

Should the rains continue much longer doubtless the crop of wheat in Suisun valley will be shortened, but this will be partially compensated for by corn, as farmers are beginning to talk of planting it on their unsown lands instead of seeding with wheat.

STANISLAUS.

News, March 8: According to the best estimates that could be adduced, there were in the year 1869, 300,000 acres of land under cultivation in Stanislaus county. That estimate included grain fields, orchards, vineyards and gardens. Owing to the continuation of the drouth, that was the last favorable showing we have had of the productions of our county. We then, on the land under cultivation, though it was not the most favorable year for grain-growing, produced 4,050,000 bushels of wheat and barley. During the past week we have taken some pains to ascertain the increase of acreage sown to grain the present season over that of 1869. West of the San Joaquin river, the increase is estimated at 120,000 acres. In

the middle division, west of the Empire and Langworth, and east of the San Joaquin, 30,000 acres more. Then if we give to the eastern division, which skirts the entire foothill region of the county, for a space of from ten to twenty miles in width, and over forty in length, an increase of 50,000 acres more, we will have in round numbers an increase of acreage of 200,000 over that of the year 1869, giving us for the present season 500,000 acres in cultivation. The gardens, orchards, and vineyards will not aggregate 3,000 acres. It is safe to presume that the rest is sown to wheat and barley, as our people cultivate little or nothing else.

TULARE.

Delta, Feb. 29: THE EARLY GRAIN of this year is not so promising in some localities as we were led to expect, owing to the late heavy rains which have caused it to lodge. On Lewis creek the standing grain is about 2½ feet high, but portions have lodged and will probably take root again in the ground, and poor hay will be all that can be expected from it. The late grain and the poorest soil will from present prospects give the best results.

WOOL BUYERS.—A number of wool buyers from San Francisco and elsewhere are in this county negotiating with sheep men for the opening clip. Some sales have been made at prices in advance of those paid last fall. From present indications we are induced to believe that the wool market will soon be active.

YUBA.

Appeal, March 9: CATTLE DYING.—We learn that the cattle along the Sacramento river are suffering for food, and in some cases actually dying of starvation and exposure. Mr. Nelson who resides below Nicolaus, has lost twenty head from this cause within a few days. The "Dana" on her upward trip left a lot of potatoes for feed at this place and on her return will take a lot of hay, which will be divided among some half a dozen ranches, where the cattle are starving. The ranches are all under water with the exception of the old Indian rancharie mounds, on which the cattle are huddled without shelter or food in many cases.

TOO WET.—In conversation with a gentleman from Sutter county, yesterday, we learned that all farming work has been suspended for the present, the ground being too wet for the farmers to do anything in the way of plowing or planting. Our informant, who is a prominent farmer, informs us that a larger area is already planted to grain in Sutter county than has been planted at any previous season. A large share of this is volunteer, on farms on which the drouth of last season injured the crop. This class of grain is in a very prosperous condition, equalling the summer-fallow, of which there is a large area in the county.

ANOTHER WELL.—The water company are making extensive preparations for furnishing the city with an abundant supply of water. The hoisting works were raised by F. C. Chase yesterday preparatory to boring a second well at the Water Works. The tools will be in readiness to-day, and active operations will commence to-morrow. The well is to be twelve inches in diameter and from 150 to 200 feet deep. It will be bored about three feet from one which is twelve inches in diameter and seventy-eight feet deep.

OREGON.

Oregonian, Feb. 24: Information has been received to the effect that the late rains sent the Yamhill river up with a rush, and that most all the fencing along the river bottom was swept away before the swelling tide. It is thought that many hogs and a few cattle have been drowned.

The river has fallen considerably at Salem. All the streams flowing into the upper Willamet are receding. The lower Willamet is still rising, caused mainly by the rising in the Columbia.

At the Dalles, at last accounts, hay was selling at fifty dollars a ton, oats at \$1.50 a bushel, and wheat and barley at \$2.

The navigation of the Umpqua river is practically a failure. A steamboat during the late rise succeeded in going twelve miles above Scottsburg, but could ascend no further. We have no idea that the effort to navigate the stream will ever amount to anything.

A letter to the *Bulletin* from Grant county states that out of 19,000 head of cattle in the county, less than 100 have been lost this winter.

The South Salem sawmill lost a boom of logs in the flood on Monday night.

INTELLIGENCE from Ochoco Valley states that there has been very little loss of stock in that locality.

THE DAIRY.

Setting Milk for Cream.

California is every year extending her dairies, and yet we do not produce butter and cheese enough for home consumption; nor do all our dairymen obtain the largest per cent. of cream available from a given quantity of milk. We would have been glad to have given the following or something similar to it, as the result of California experiment; but, for the lack of it, we avail ourselves of the experiments of an Atlantic States dairyman believing that at least a few having large or small dairies may in this State be interested in the resulting facts.

E. W. S., in the *Rural New Yorker*, gives the following details of several experiments made by him to determine the relative advantages of deep setting and the ordinary methods of setting, with some remarks on the matter of handling milk generally:

Deep vs. Shallow Pans—Mixing Milk.

Farmers are earnestly beginning to study economy of labor in their operations, being driven to it by the fall in prices of products with little or no fall in wages. The handling of milk in the butter dairy has ever borne hard upon the farmer's wife. If the milk usually put into twenty to thirty 10-quart pans could be set in one large circular pan, seven inches deep, the skimming, washing the pan and handling the milk would be much less than with the small pans. Besides, if each milking of cows was set in a single pan, the various qualities would all be mingled, and the cream be more uniform than with each cow's milk set in separate pans. One cow's milk will sour earlier, and the cream from it rise earlier, than another's; but if all are mixed, all must become of like quality. So there are many good and cogent reasons why a single milking from a dairy of cows should be set in one large deep pan, if as much butter can be obtained by deep setting.

There have appeared at various times statements asserting it as a fact, that deep setting yielded as much or more cream and butter as shallow or ordinary setting. Desiring, if well founded, to adopt this system in my own dairy, I examined many of those published cases of deep setting, but failed to find a single comparative trial that really tested the question. A certain amount of milk set deep at one time and a like amount set shallow at another time, or one cow's milk set deep and another shallow, does not offer a satisfactory test, since the quality of the milk, the temperature and various other considerations, may influence the particular trial. The only way I could discover to make a fair comparative test was, to take a quantity of milk well mixed, and deprived of its animal heat by cooling and stirring, and then divide it, setting half shallow and half deep—thus giving each an equal chance under the same circumstances. Accordingly, on the 15th of July, at evening, I tried the

First Experiment.

By cooling 140 lbs. of milk in a broad-mouthed, 20-gallon can, down to 75°, by placing it in a tub of water and stirring; then weighing out 70 lbs. and setting it in pails 7½ inches deep, and a like amount in pans 2½ inches deep. The following morning 110 lbs. were thus cooled and set half each way. Thus 125 lbs. had been set, the same amount deep and shallow, consisting of a day's milk from the same cows. This milk was set in a milk-room which kept it at a temperature of 68° to 70°. The night's milk was skimmed 36 hours after setting, and the morning's milk 26 hours—all sour, some thunder meanwhile. The cream from each way of setting was placed in a cool well over night, before churning. Deep setting produced 4 lbs. 8 ozs. of butter; shallow setting, 5 lbs 4 ozs. Deep setting took 28.44 lbs. of milk for a pound of butter; shallow setting took 24.38 lbs. of milk for a pound of butter. This result somewhat surprised me, as there was more bulk of cream from the pails than the pans; but it is probable that more milk was taken with the cream from the pails. On the 29th of July I tried the

Second Experiment.

By setting at evening 184 lbs. of milk, after being mixed and cooled as before to 80°—the half in pails 7½ inches deep and half in pans 2½ inches. The following morning 148 lbs. of milk were cooled and

set in the same way, making 166 lbs. of milk set deep, and a like amount set shallow, after being all mingled and rendered of uniform quality. The weather was more favorable, that is, cooler, than on the former trial. The milk in pails got sour in 36 hours; in pans, 42 hours. It was all skimmed at one time. The cream was cooled over night as before; 166 lbs. of milk produced from deep setting, five lbs. five ounces of butter; from shallow setting six pounds six ounces. Deep setting took 31.26 lbs. of milk for a pound of butter. Shallow setting took 26.04 lbs. of milk for a pound of butter. I have no doubt that the great quantity of milk required for a pound of butter was caused by the deficient cooling of the milk (80°) before setting, and this operated worse on pails than pans. Yet, the weather being cooler, ought, perhaps, to counteract this, and the milk did not sour as soon as in the first trial. This second trial seemed to point the same way as the first, only more strongly against deep setting. Wishing to give it a fairer trial as to temperature, on the 12th day of August at evening, I tried the

Third Experiment.

Under more favorable circumstances. I had a pan 36 inches in diameter, 13 inches deep, set inside of a tub 40 inches in diameter, and surrounded by spring water. I put 190 lbs. of milk into this pan and cooled it down to 68°, stirring while cooling; 95 lbs. of this cooled milk were set deep and 95 lbs. shallow. The following morning 172 lbs. of milk cooled to the same degree in the same way, were set half deep and half shallow—thus making 181 lbs. of milk set deep and the same amount shallow. In this case the deep and shallow setting all soured together in 36 hours. When churned, the deep setting gave 6 lbs. 4 ounces of butter; the shallow setting 7 lbs. 4 ounces. Deep setting required 28.96 lbs. of milk to one of butter; shallow setting 24.96 lbs. to one of butter.

These experiments seem all to point one way, and that against deep setting, and I do not see how the trial could be more equal or more fair to both modes, unless the milk could be kept at a uniform temperature of 60°, which, from various trials, I believe to yield the most cream—a lower temperature being unfavorable to the liberation of the cream. A neighbor of mine has used, for some months, 30-inch circular pans, surrounded by water in tubs, milk set about 7 inches deep, in a milk-room kept at a temperature not above 66°. He has not made any comparative tests, but has sometimes weighed his milk when set. On the 25th of June he set 491 lbs. of milk, cooled to and kept at 66°, skimmed at 38 hours, and yielded 18 lbs. of butter; or one pound of butter to 27.28 lbs. of milk, which, so far as deep setting is concerned, does not differ much from my first and third experiments. My neighbor said he thought he obtained as much butter from deep as shallow setting, but had not tried comparative tests by dividing a milking and setting half each way; in fact, he judged from the quantity obtained from a certain number of cows or, comparing the quantity of milk. This he was ready to admit was not a true test. I fear most, if not all the statements have no better basis. I wish it were otherwise; for I had a wrong desire that deep should be as economical of butter as shallow setting, and still should be glad to find some error in my experiments, revising the conclusion. I hope others will make accurate comparative tests and report.

These experiments do not attempt to determine the true depth to set milk to obtain the greatest amount of butter, but only as between the common depths and 7½ inches, which may be considered deep setting. It may be found that 1½ or 3 inches is a better depth. The greatest difficulty in trying these various experiments is, that it requires a large quantity of milk to test more than one at a time, so as to determine the relative quantity of butter, and it cannot safely be tested on bulk of cream, for this is somewhat deceptive, and would require accurate instruments and an expert observer to determine the real value of the cream in butter. Each of the foregoing experiments showed more bulk of cream from the deep to the shallow setting, while the butter showed 14 per cent. more from the shallow setting.

Large Circular Shallow Pans.

It may be found economical to use the large circular pan 24, 30 or 36 inches in diameter, although the milk be set only 3 inches deep. A 24-inch pan 3 inches deep will hold 5½ gallons, or the capacity of 6 common 10-quart pans. A 30-inch pan 3 inches deep will hold 8½ gallons, or as much as nine ordinary pans set at the

usual depth. A 36-inch pan, at that depth, will hold as much as 14 common pans. The circular form is certainly most convenient, least expensive according to capacity, and has the merit of being open to the use of all mankind, with nobody's claim on it for a patent. The cost of these larger circular pans is about the same quantity of milk; and one 36-inch pan is certainly kept clean easier than 14 common pans. Then the further object of mingling many cows' milk, and thus effecting a greater uniformity in quality of milk and cream and butter will be obtained. And this latter point we think will prove of great consequence in butter making, and will tend more to uniformity of quality than any other reform yet introduced. But when the milk is set in small pans, I would advise the use of a

Large Mixing and Cooling Pan

Where the milk shall all first be gathered into one body, made of uniform quality and cooled by water and stirring to 60°, thus ridding it of animal odor, when it may be transferred to small pans, and the cream on all the pans will rise alike. This cooling pan of 36 inches in diameter will answer 25 to 30 cows; and will cost, 13 inches deep, \$4; and the wooden tub for water, 40 inches in diameter, 14 inches deep, smallest at top, will cost the same. Thus this cooling apparatus will cost \$8, and the increased value of the butter made in warm weather from 25 cows, in two weeks, will pay the bill.

Stock Grazing on the Plains.

The present winter has been a most trying one for the stock grazers in the great territories of Wyoming, Colorado, and New Mexico. The "great heart of the Continent" covered by these territories has heretofore maintained a very good reputation for the mildness of its winter climate, considering its latitude and elevation above the sea. This favorable temperature is mainly due to the warm winds which reach that locality from the Pacific shore; but during the winter now passing away these winds have scarcely been felt there, while, in their stead, that region has been swept by cold northerly blasts from Dakota and British Columbia. The territory of Utah has also suffered more or less from the excess of northerly and the absence of the usual ocean winds.

The effect of this change in the usual air currents has been most noticeable in the obstruction of railroad travel on the Union Pacific Railroad, which traverses the central portion of this region. Its effect upon the stock interest is not yet fully known; but a correspondent of the *New York Tribune*, Mr. R. A. Cameron, who appears to be very well posted with regard to the facts, has given a statement of the condition of the stock interest up to early in February from which we condense as follows:

There has been no suffering among the cattle in Southern Colorado or New Mexico. There has not been over 3½ inches of snow in any of the grazing valleys in the extreme south of Colorado, which has at no time remained on the ground over 48 hours. In the Central and Northern part of that territory, and in Western Nebraska the snow fall on the usual feeding grounds has been about equal with that ordinarily experienced in Illinois; but the cattle were generally removed to more favored spots, and have consequently suffered but little. Reports from four large stock owners, holding 59,000 head report no loss; one person with 8,500 head reports small loss; another with 3,200 reports the loss of 13 head; two other owners report 9,000 and 2,000 head each with losses of 3 and 2 per cent respectively. Of the 20,000 sheep in Laramie valley a loss of 4 to 5 per cent is reported. Horses have not suffered anything to speak of. The proprietor of a herd of 18,000 head kept on the Platte, some 50 miles east of Greeley, reports that his loss will not exceed 2 per cent.

This showing is certainly much more favorable than the public had been led to expect, from the general reports of the weather for that region, and certainly augurs favorably for the future of stock raising in that great central portion of the continent. The correspondent above alluded to promises a full and definite report of the result of the winter's losses by

first of May. He thinks the worst was over in December, and that comparatively but little will have to be added to that already reported.

He thinks that if each stock raiser would provide a month's feed of hay for his cattle, which might be easily done during the summer, no considerable loss need ever be feared; even if not needed, safety and a reasonable care for our dumb animals demands it. Moreover, one feels vastly better if he knows that the safety and comfort of his stock is provided for in case of need. Such a winter as that just passed need not be expected oftener than once in ten years.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

DEVICE FOR STEADYING WAGON POLES.—Reuben Seadens, San Francisco, Cal. This invention relates to a device for steadying the poles of wagons and more particularly of heavy trucks, to prevent them from striking the horses when passing over cobbles, or uneven surfaces, and it consists in the employment of two cylinders containing elastic springs. A rod from the lames on the harness of each horse passes through one of these cylinders so that the elasticity of the spring shall be utilized by any strain brought upon it. The other end of the cylinder is connected with a bar upon the top of the pole by means of a rod and link or ring and the horses are thus much relieved from the succession of blows from the pole.

METALLIC FILTER.—E. J. Fraser, San Francisco. This invention consists in the employment of a series of screws of amalgamated wire cloth or other suitable substance which are cut into the form of the containing vessel into which they are packed, one above another, until they have a considerable thickness. The tailings or slum containing the float gold are then passed through this filter which detains the gold and can be cleaned up in the usual manner at any time.

AIR-EXHAUSTING APPARATUS FOR PRESERVE CANS, ETC.—D. N. Phelps, San Leandro, Cal. This invention relates to an improved apparatus to be employed in connection with an air pump for the purpose of exhausting the air from cans, jars and other vessels. And it consists mainly in so constructing and arranging the receiver or covering vessel, that the orifice through which the air is extracted from the jar, can be closed before removing the receiver from over it.

SAFETY LAMP AND BURNER.—Emil Boesch, San Francisco, Cal. This invention relates to an improved lamp, and its object is first to so construct the wick-tube that by means of a movable ring the light is increased or diminished without changing the relative position of flame to the Argand chimney which is used, and upon which relative position the efficiency of the light depends. It further consists in making the device a safety lamp by means of certain connecting tubes, or channeled passages, which are so arranged that they convey any accumulation of gas or vapor from the body of the lamp to the burner, where it is consumed. A novel arrangement is attached for suspending the lamp from the wall, or bracket, and also an improved adjustable reflector attached above the lamp.

OPERATING RAILROAD SWITCHES.—E. A. Trapp, San Francisco, Cal. This invention relates to improvements on apparatus for throwing the switch rails of a railroad switch to any desired point by the approaching locomotive, previous to its arrival at the switch, and at the same time operating a signal which indicates the position of the switch or throw rails. The device is situated at some distance from the switch and is connected with a mechanism which is operated by the passing locomotive or car, and in turn operates the worm gear and throw lever at the switch.

WHATEVER you would not wish your neighbor to do to you, do it not unto him. This is the whole law; the rest is merely the exposition of it.

USEFUL INFORMATION.

Wonderful Remains of Ancient Iron Workers.

The *Engineer* of Dec. 15th, 1871, contains a lengthy paper, by Robert Mallet, giving some very interesting facts with regard to the existence, in India, of numerous large masses of manufactured iron, which are found in various parts of that country. These masses consist of large beams or rafters of iron, 20 feet or more in length, and from 8 to 12 inches square. Masses of iron of this description are found among the ruins of ancient cities at wide distances apart, showing that such productions were not confined to any particular locality. But the most notable relic of this character is a large iron pillar, still standing as originally placed, near the city of Delhi. This pillar bears an inscription giving the name of the king in whose honor it was erected, but without date. Its height above ground is 22 feet; but its depth underground is considerably greater, as it has been followed down, by excavations, 26 feet, without any indications of finding the bottom, or at all loosening the column. It is thought that the entire column cannot be less than 60 feet in length, while the lower diameter is 16.4 inches, and its upper 12.05—the diminution being uniformly 0.29 of an inch per foot. The pillar will weigh about 17 tons. All these remains are very ancient, and none can be referred to later than the 10th century. From the form of the letters on the Delhi pillar, it is known that it could not have been made later than the 3d or 4th century. The letters were evidently made with a punch and hammer.

The Immediate Question of Interest Connected with such works are—how were they made? The iron is malleable and not cast iron. Specimens taken from the pillar are easily drawn out—a process inapplicable to cast iron. If this mass was forged, how could it have been done with the imperfect appliances known in those days? The possibility of forging a mass of iron by hand and with sledge hammers, which was the only method known in Europe until the present century, was limited by the power of the men to endure, within striking distance, the radiation of heat from the mass. This limit was reached in England in ship's anchors, the largest of which were welded by 24 "strikers," trained to strike in time, with 14 to 18 lb sledges, and it is claimed that the proportion of heat radiated by these largest anchors, when compared to the Delhi shaft is as 64 to 201. The impossibility of welding such a mass by hand is apparent.

With regard to the possibility of this shaft having been cast, aside from its unmistakable, malleable character, the fact is interposed that the iron workers of those days, so far as we have any knowledge, never constructed furnaces that would turn out over 100 pounds of iron at a charge; hence it would require that at least 400 such furnaces should be tapped at one time to form such a casting. The manifest impossibility of such a thing must be apparent to every iron smelter.

Now were the ancient iron workers of India acquainted with mechanical appliances which have not been excelled by anything of the present day? Mr. Mallet seems to leave the question at this point as an insoluble metallurgical enigma.

A Possible Solution of the Problem.

In the issue of the *Engineer* for Jan. 12, 1872, Mr. George M. Fraser comes to the rescue with an ingenious and very plausible theory. It is pretty well established that the natives of India never did and do not now make cast iron, although the Chinese do. All the iron manufactured in India is from black magnetic oxide, which, in the furnace is not converted into cast iron, but into a mass of malleable metal, presenting in some parts a crystalline, in others a fibrous fracture. This product, not fluid, is removed from the furnaces by allowing them to cool, and then breaking away the front, so as to allow the removal of the charge in a mass. Of course the heated and plastic mass settles down to the bottom and takes the form of the lower portion of the furnace.

Now suppose a furnace built with the interior of its lower portion corresponding to the size and shape of a section of

the column or beam wanted. Let a number of these sections be thus formed by separate furnace charges, so that when put together, endwise, they will constitute the column or beam desired. All that is needed is an end or butt welding of the pieces. It is well known that this kind of iron welds at a very low heat—much lower than that required for wrought iron, and there is no very great stretch of probability required to suppose the accomplishment of such a thing by even the present native iron workers of India, who it is known are able to effect a very fair weld of shafts 6 and 8 inches in diameter, with open charcoal fires. The sections from the furnaces as above, could be easily prepared, by heating and hammering, to make good joints, and then only a surface heating, with very little hammering upon the end of the section would be required to effect a weld, that, to the eye, would be very passable. Of course iron so constructed and welded could not be expected to stand any great tension, such as is endured by wrought iron shafts built up from regular blooms or from longitudinal bars by modern appliances. No such test has ever been applied to the Delhi column or to any other of the India remains, and the probability is that a comparatively slight blow, as from a cannon ball, would separate this shaft into two or more fragments, the breakages taking place at the welding joints.

The Telegraph as an Errand Boy.

Now uses are constantly being devised for the telegraph, the latest of which is to employ it as an errand boy, as follows: A company has been formed to establish offices at convenient places in various parts of New York, whence messengers can be sent, on demand, to any house within the respective districts. These offices are to be connected by telegraphic wires with the houses of such persons as pay monthly \$2.50 for the benefits. The occupants of a house, by touching a key, will simply give notice at the office that a messenger is wanted. The offices will be numerous, and so distributed that a house can be reached by a messenger within three minutes after the notice. It will be the duty of the messenger to go on any errands required of them, to any part of the city, the persons employing them to pay the company fifteen cents for every half hour of service.

It will be seen at a glance that this system will bring many conveniences; but all its advantages cannot be appreciated until it has become a necessity of domestic life in all large cities. There are thousands of little services which persons in moderate circumstances would gladly pay for at the rates named, but they cannot afford, or do not desire to keep an errand boy, or other male house-servant. But the plan promises safety and comfort. It will afford security against burglars at night, and a ready means of calling a physician or a friend in cases of illness. If burglars are in the house, two touches of the key will bring a policeman at any hour of the night. In cases of fire, too, the system would be invaluable; many small fires become great ones on account of the unassisted efforts of servants or members of the family to suppress them without a general alarm. Indeed the more one considers the uses of the proposed system, the more they multiply themselves, and we confidently predict that we shall be wondering how our ancestors got along without it.

How to SHAVE.—As you strap your razor, strap the two sides alternately, and keep the back of your razor always on the strap, as you turn it from side to side. You thus avoid cutting your strap and turning the edge of your razor. As you shave, keep your razor almost parallel with the skin, and not at a great angle with it. Give your razor also a slight lateral motion. In fact, to borrow the simile of the artist, "the more you can make your shaving like mowing grass with a scythe, the better." Do not make faces as you shave, with the object of making a better surface for your razor to act upon. The skin when strained is easily cut. Adopt these hints and you will bless the unknown giver.

NEW USE FOR PARAFFIN.—Dr. Vohl announces that mixed with benzole or Canada balsam, paraffin affords a glazing for frescoes much superior to soluble glass. By covering the interior of wine casks, with a film of pure white paraffin poured in melted, he has effectually prevented the spoiling of the wine and its evaporation through the wood.

GOOD HEALTH.

A Man With a Watch Key in His Lungs.

Mr. Eli Hempstead died a short time since in New Haven from a most singular cause. Some years ago he was attacked with insanity, and was sent to the Insane Retreat in Boston. While there he pushed a watch key up his nose, and after his recovery informed his physician what he had done.

An effort was made to get it out, but without success. He left the Retreat and nothing further was done to remove the article, though he occasionally spoke of feeling it. In a year or two he was attacked with a sharp pain at the lower end of the right lung. He suffered from it for some time, when it passed away, and for two years he enjoyed good health. A few weeks ago he went to New Haven with an invoice of produce, and while engaged in lifting barrels was again attacked with pain and bleeding from the lungs.

He was taken to his father's house, where, in a few days he died. His case was so singular that the physicians made a post-mortem examination, when they found the key embedded in the lower part of the lung and surrounded by a lump in a state of mortification. The key had dropped out of the nose through the windpipe into the lung, and had remained there over four years.

SKIN GRAFTING.—A late number of the *Indiana Medical Gazette* contains an account of three successful cases of skin grafting. This curious operation is as follows: A patient is suffering from a large ulcer. The worst is, however, over, and the ulcer is healing. But nature works too slowly for modern surgery, so a piece of skin is cut from some other part of the body and planted in the sore. At first, it seems to have failed, for the graft disappears, evidently absorbed into the wound, but in a few days a speck of healthy skin appears in the centre of the raw surface. The transplanted piece has, in fact, taken root. The speck now rapidly spreads, other grafts are made to take root, becoming each of them centers of a new growth, which, as they expand, join each other, and in a very short time cover the site of the ulcer with a smooth and healthy skin.

Not long ago an experiment was tried in a London hospital of grafting a negro's skin on an ulcer of a white child, to see if the pigment cells would be reproduced. The experiment failed, as the bit of skin died. The authors of the cases quoted in the *Indiana Medical Gazette* do not say whether the skin reproduced after grafting was the same color as that of the rest of the body or the pink color so often seen in the scars on natives' legs. This is a point which would be interesting to know.

THE RIGHT AND LEFT HAND.—The generally accepted doctrine is that the pre-eminent use of the right hand is due to the force of education, without any natural tendency in physical formation. But an eminent physician in discussing this question takes the opposite ground. He insists that the preferential use of one side is not limited to the arm, but extends to the leg, which is not subjected to education. The tendency to use one side more than the other manifests itself before education begins.

Left-handedness is a physical malformation. Monkeys and parrots show a tendency to use the right side, preferentially. In properly developed persons the left hemisphere of the brain is the larger, as are the left arteries, and independently of the size of the vessels, the stream of blood is less hindered on the left than on the right side.

HYGIENIC APPLICATION OF THE SPECTROSCOPE.—The water used by the people of a crowded court, amongst whom several cases of typhoid fever had appeared, was drawn from a rather shallow well, and was highly charged with various unoxidized compounds of nitrogen. It was suspected that, from some defect, the contents of a public urinal obtained entrance to the well. The fact that the well water contained seven times as much common salt as the normal water of the vicinity was some confirmation of the suspicion. Prof. Church obtained absolute proof by the following method: He introduced two grams of a lithium salt into the urinal, and, two hours later, was enabled readily to detect with the spectroscope the presence of lithium in a liter of the well water, which by previous examination had shown no trace of this substance.—*Quarterly Jour. of Science.*

Scarlet Fever Non-contagious.

Dr. E. H. Lewis, in an interesting article published in the *Northwestern Medical and Surgical Journal*, states some striking facts bearing upon the contagiousness of scarlet fever. From data, gathered during an epidemic in 1870, the doctor concludes that scarlet fever is not caused by sewer gases, or marsh miasms, or decayed vegetable matter, impure water, or the habits of people; for in the cases observed by him all these causes were absent. The epidemic traveled directly and rapidly through well-drained and elevated regions of country, sweeping everything before it. In the cases observed, the doctor could find nothing to enable him to believe in its contagiousness. He says: "I have not the slightest doubt that the causes of scarlatina depend upon some peculiar condition of the atmosphere favorable to the propagation of the scarlatina poison, and that it travels in a manner similar to epidemic cholera, the principal feature of which it simulates, the difference being that in cholera the force of the disease is spent upon the bowels, while in scarlatina it is expended upon the skin and throat."

A CASE FOR THE DOCTORS.—A singular case came under the notice of John B. Thayer, at East Cambridge, on Thursday. He was called to a house on Charles street to attend an old lady, Mrs. Mary Carton, who was there lying with both thighs fractured. The patient is 76 years old and bedridden, though not troubled with any specific disease. While her daughter was assisting her to rise, a noise, like the snapping of a whip, was heard, followed by one of a similar character, and the old lady suddenly sank to the floor. Upon examination both thigh bones were found to be fractured. There was no abrasion of the skin or external marks visible. The doctor states the cause of the fractures to be from muscular contraction, occasioned by long disuse of those functions, and though a similar case has never come under his immediate observation, it is a matter of record that such cases have been known, but they are extremely rare.—*Boston Transcript.*

FOREIGN SUBSTANCES IN LIVING FLESH. Mr. J. W. Baughman of Baltimore, Md., writes that a lady recently ran a needle into her flesh, about three inches above the knee, breaking it off under the skin. She preferred to risk the consequences rather than to have it extracted by a doctor. Mr. Baughman thought of using a magnet, and applied one of the horseshoe shape, 8 inches in length. She wore it for two days, more or less, and then found the point end of the needle protruding from the skin, one inch from where it entered. The needle was easily removed. Our correspondent is curious to know how the needle could come to the surface point upward, having thus turned round in a space less than its own length, which was 11-16 inches, and he suggests that the muscles may have turned it about.

PROTRUDING TEETH.—A child's teeth may be gradually pressed into proper shape by the application of a rubber band, which any first-class dentist can put on and attend to at intervals. That any child should be doomed to go through life with ugly, misshapen teeth, is but too common a fault of parents, whose omission of duty in such matters is something a child, in maturer years, finds hard to forgive. Science and art have advanced to such a degree in the present age that excuso for physical deformities of any sort, to be allowed to become prominent, is only another name for gross, unpardonable carelessness.—*Herald of Health.*

NOSE-SHAPER.—Those who are cursed with an ill-formed nose, can now, according to the *London Court Journal*, have it "quickly shaped to perfection" for the ridiculously small sum of ten shillings and sixpence. A contrivance has, it seems, been patented by an enterprising London tradesman which, "if applied to the nose for an hour daily," so "directs the soft cartilage of which the member consists," that the ugliest proboscis in creation, becomes "in a few days" a nose worthy to figure upon a *chef d'œuvre* of Phidias.

POISONING BY MERCURY.—Dr. Melsens of Brussels has found potassium iodide to be a preventive of poisoning by mercury, as it conducts off the mercury in a soluble condition in the urine. He recommends that the workmen be given wine containing iodine before and during their work not as a medicine, but as a pleasant refreshing drink.—*Revue Universelle.*



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

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TABLED.—Speech of Hon. T. W. Tipton of Nebraska in Senate, on Legislative, military and official usurpations.

Speech of Hon. A. G. Thurman of Ohio, delivered in Senate Feb. 6, 1872, on the rights of citizens of the United States.

The report of the Commissioners of Fisheries of the State of California for 1870-71.

Transactions of the 5th and 6th annual exhibitions of the Colorado Agricultural Society, held at Denver, September 1870 and 1871. From M. W. Levy, agent of the PACIFIC RURAL PRESS.

The Journal of Materia Medica for Jan. and Feb. 1872, conducted by Joseph Bates, M. D., and H. A. Tilden, New Lebanon, N. Y.

Fifth report of the Commissioner of Fisheries of the State of Maine for 1871. From Charles G. Atkins, Augusta, Me.

Walter Brown & Son's monthly wool circular for February; extracts from which will be found in our columns. No. 26 and 28 Park Place, N. Y.

RECEIVED.—We have in hand something very good from "Mary Mountain," which will appear in our next issue.

A communication from D. L. P., on the growing of garden seeds in California, on file for next week.

"Earnest Worth," sends us a chapter on "Useful Women," which is deferred for a week.

Inquiry About Grafting.

EDITORS PRESS:—Another will accept of your invitation to "write for your paper," but not this time to give you any result of practice in farming operations; but for the purpose of inquiry about grafting or not grafting fruit trees. I do not doubt that if I put a superior seedling on an inferior stock or seedling, the result will be a better fruit, but when you say, "like produces like," what is the peculiar condition of the fruit tree that makes grafting necessary.

Lately I have read in a paper—if I am not mistaken, in yours—that farmers and nurserymen should pay more attention to raising of new varieties of fruit trees from the seed. Well, now I have a nice lot of seedlings, apple, pear, peach and apricot, also almond and English walnut, one year old, and now what to do with them I would like to hear a suggestion from you.

San José, Feb. 23, 1872.

We are pleased to hear from our correspondent. When we say that "like produces like," as applied to the growth of fruits and vegetables, we wish to be understood that in all cases we would prefer the seeds of the best vegetables rather than the poorest, in the hope of an improvement on the original; we should never expect to reap a superior grain, where we had sown miserably poor seed; nor would we expect superior blooded stock from inferior animals. The seeds used in the growth of seedlings, are generally those procured promiscuously from orchards, where every degree of intermixture is had in the dissemination of the pollen of the flowers; so that it is hardly to be expected there will be two blossoms that will be impregnated exactly alike; hence an infinite variety of fruits in all seedlings.

The experiments of skillful culturists, however, show that very few seedlings thus grown, are precisely like the original, or in quality equal to the variety from which the seeds were obtained. It is, therefore, better to graft our seedlings with known good varieties, than to take the chances of their being as good as the fruit from which they came. It is believed by many that good varieties of fruits, after a long series of years of cultivation or extension by grafting, will "run out;" and that new varieties have more vigor and possess merit worthy the efforts of connoisseurs to bring them out. But where this is done, instead of letting large numbers of seedlings attain to bearing size and age, to test their quality, it is far better to take one tree of a size capable of receiving an indefinite number of grafts on its limbs and put 20 or 30 grafts, obtained from as many seedlings, all upon this one tree, and the grafts producing fruit the second year, determines their quality without waiting 5 or 6 years as with the apple, to determine its value from full-grown trees.

Our suggestion would therefore be, to graft the seedlings with the best known varieties; because those desiring trees for orchard planting want such, and because you will find it quite impossible to sell any great number of 2 or 3 year old seedling trees for such purpose. Fruit growers and fruit eaters are quite satisfied with our best varieties as they now exist, and greatly prefer such, to taking their chances with seedling trees.

Buy the Right Fruit.

A subscriber, A. C., writing from Stony Point, Sonoma county, attributes the dissatisfaction felt by the consumers of fruits with the article they purchase, to a want of knowledge of the best varieties; that if they would give more attention to this, and then buy none but of good quality or condition, when put upon the market, very little trouble would ever be felt. He recommends among the apples for family use, the Red Astrachan, Gravenstein, Baldwin, Bellflower; Smith's Cider, Esopus Spitzenberg, R. I. Greening and Yellow Newtown Pippin.

Then he makes the following suggestion on another matter:—"A good way to make dry tough timber more serviceable, such as whip stock, axe handles, etc., is to soak them in water for six hours and then use them until dry; by this means you bring the spring into the wood before breaking. Try it!"

In answer to an inquiry:—You will need from 6 to 8 pounds of mangol wurzel seed to the acre. Sow any time in early spring after all danger of severe frosts is passed. Sheep will run and beat for them, and they are fattening for all animals eating them. It is usual to sow from 15 to 20 pounds of alfalfa seed to the acre; the larger quantity being now generally preferred as it make a finer feed or hay. It is usually sown broadcast, but there can be no objection to drilling it in, if you should prefer it.

School Teachers' Wages.

We have a correspondent at Vacaville, W. C. H., who is evidently clear headed in regard to his appreciation of the RURAL. In a recent letter he says he is a subscriber for the PRESS and always expects to be; that though he takes several papers the PRESS is the family favorite; that it is the true friend of the farmer, and should be supported by everybody; that there are two mysteries connected with it, one of which is, to know how people get along without it, and the other to know how we get so much good reading matter for each number.

Then he takes up the subject of teachers' wages, which has recently been the theme of discussion with the Santa Clara Farmers' Club, and hopes it will be continued till the whole people are aroused to the importance of the subject. Thinks that school teaching like many other things of a public nature, has become a monopoly, and he fails to see that we have any better schools now, paying our teachers \$100 a month, than 15 years ago when they were paid \$50 or \$60 a month, and the common laborer was receiving double what he is now. Fails to see that we have any better teachers as a class, than before the institution of the State Normal School.

Thinks also that it is poor financing to pay teachers or farm hands \$100 a month, when just as good an article can be had for \$50. Don't see why we pay to the one \$100 for 6 or 7 hours of 20 days to the month, and to the laborer who works 12 hours a day and 26 days to the month only from \$25 to \$30 per month.

This is a subject that has doubtless engaged the attention of others than W. C. H., in the rural districts of California, and we shall be ready at all times, to receive their ideas and opinions on this or any other subject connected with the advancement of education and the general welfare of the State.

Were we, however, to advance an idea for the serious consideration of W. C. H., it would be this:—Fifteen years ago the common laborer was getting \$60 a month, and we will say for five years he continued to realize that amount. During that same five years the present school teacher was fitting himself for his position by close application of mind by day and night. He was not only receiving no wages at all, but was nearly every month for five years, paying for board and tuition an amount quite equal to that received by the common laborer or \$60 a month.

Now, would it be any more than right that the teacher at the end of the 15 years, should have in pocket an amount of earning or money laid up equal to the common laborer for the same time? and yet this cannot be if you bring down his wages to that of the common laborer. And besides, there are but few men who have worked from their youth on for 15 years as day laborers, that are qualified to teach anything more than the most ordinary branches of a common school, and there are very many of our farmers' sons and daughters who want more than this, and therefore must have a more highly qualified teacher than one offering his or her services at \$30 or even \$50 per month.

Caladium Esculentum.

We gave an account of this vegetable on page 256, last volume of the PRESS. We have just received from a correspondent at Arcola, La., notice to the effect that he has sent us a package of tubers of the above-named vegetable, called also, Tanyah, which if they reach us will be for distribution among our subscribers free. He also sends us a package which we have received, of the seeds of the Holly, a beautiful evergreen common to the Atlantic States from Massachusetts to Texas, in some of its varieties. It is exceedingly ornamental for the yard or lawn; grows in Louisiana 30 or 40 feet high, bears a profusion of berries which contrast beautifully in winter with its dark green foliage.

Also some berries of an ornamental tree cultivated extensively in that State, and called the China tree. It is represented as deciduous, has beautiful foliage and large quantities of light yellow berries; is equal to the mesquite of Texas, as food for horses and cattle; the wood is durable for posts and is beautiful as a veneering wood. These seeds are all free to subscribers, in small quantities, where orders are accompanied by stamps sufficient to pay the postage on packages.

RECEIVED.—The proceedings of the Sacramento Farmers' Club, of March 9th, came too late for insertion this week.

Too Wet to Plow.

In several districts of the State where adobe lands abound, the continued rains have made the lands too wet to admit of plowing for wheat at present, and it is becoming a question of great importance to know how late it will do to defer seeding and still hope for a fair crop. Many doubtless will sow wheat much later than they would otherwise have dared, but for the unusual and almost continued rainfall since December. It has so long been the great staple crop of the majority of our grain farmers that they find themselves in difficulty and doubt as to what is best to do.

How late can the common California varieties of winter wheat be sown and mature a crop? Of course very much depends upon the quantity of rainfall between this and the first of May. But, are we to have as abundant late spring rains as heretofore, following close upon our long-continued and almost unprecedented winter rains? These are questions which time alone will determine; it becomes the farmer, therefore, to look around for some avenue of escape from the dearth of pocket likely to occur, if he fails of a fair amount of acres of fully matured and marketable wheat.

In all the Northern States of the Atlantic they sow wheat which is known as spring wheat, as late as they sow oats, or in April to the very last week, and still harvest excellent yields of wheat. It is not too late for our farmers to send for this variety, which can be sown and fully mature its grain, at a season so late that the ordinary wheat of California would be nearly a total failure. It is a wheat so entirely distinct from the other varieties, that it takes its peculiar rank and place in the markets of all the great grain depots of the Northwest. It can be procured in Chicago in any quantity. The only question is, can it mature here, subject to our almost rainless months of June and July?

Vegetable Gardens.

There are many farmers quite too negligent in the matter of a good vegetable garden; they neglect their happiness, their health and their purse in not cultivating a little spot of ground known to the whole household as *the garden*. True it is always well to look for the main chance, the great staple crops, but these will not provide the family with fresh asparagus, lettuce, peas, beans, beets, cucumbers, early potatoes, tomatoes, nor with strawberries, raspberries or currants, and yet these, all of them are just what any family in California ought to have in their season, for the health alone, if not for the enjoyment and positive pleasure of having them make a part of the daily food. Nature has given us these things for our health and happiness, and we wrong ourselves if we do not accept them as good gifts.

True they are not to be enjoyed without our own effort at their production, but when the very effort to produce them is a pleasure, when once we really set about it, it seems wholly inexcusable that there should be a single farmhouse in the land without its vegetable garden. If you have not the seeds to commence with, start the boy directly for the city or village for them, and before he gets home have a quarter of an acre of ground as near the house as convenient, thoroughly and deeply plowed. Manure it heavily from the barnyard if you can; spread evenly, and cross plow 10 or 15 feet in width on one side and plant early vegetable seeds the next day, and in three weeks you will have lettuce and radishes fit for your table.

A VEGETABLE CURIOSITY.—It was the *Chronicle*, we think, that a day or two since said: "Two trees are pointed out to the curious visitor at San Diego which grow with their leaves in the ground and their roots in the air, a peculiar way which trees down there probably have of asserting and maintaining their independence."

The author of that item didn't know much, or he would have given us the true botanical name of that species of tree. The variety growing in that locality, when telescopically examined through the bottom of a tumbler, is found to be the obfuscated ocularium, of Linnaeus, or Whiskied Intellectus of modern botanists.

A MONTANA ARTIST.—The sketch, from which our engraving of Bozeman City was engraved, was made by John Erikson, Esq., of that place, a young artist of much promise. It is pronounced by Montanians now in this city, an excellent representation of the metropolis of Eastern Montana.

Blue-Stone or Vitriol for Smut.

We have received from "Eagle Quill," a communication on the use of blue-stone as a preventive of smut in wheat, and he gives his method of its application as follows:—In 3 gallons of warm water dissolve one pound of blue-stone or vitriol; it is more quickly done by first pulverizing the blue-stone. This is the proper quantity for 6 bushels of wheat. Lay the wheat in a pile on the floor, and with a sprinkling pot saturate the wheat with the mixture, stirring it during the sprinkling, until all is alike moistened; let it lie 12 hours and then sow. He says the quantity generally used, one pound to 10 or 12 bushels is not enough.

He further remarks that irrigation is also of vital importance to the wheat crop in many places. After the seed is in, lay out drills like corn drills, 4 feet apart and not more than 30 rods in length, running from a head ditch, then cross the field with another head ditch, and so on; if the small drills are too long the upper part will become too wet for the lower part. Fall irrigation is preferable, so that the ground may be damp enough in spring to bring the grain up without spring irrigation. It is difficult to name the proper time to irrigate, as all soils are not alike, neither are the seasons; but always irrigate when the grain needs it, regardless of the stage, whether in stool, blossom, etc. Foggyism is played out; in this I have consulted with many farmers, and to us the best crop is the best proof. The best wheat for flour with us is the Chili, the best oats, the Surprise; best potatoes early Goodridge. The weather is warm, the snow fast leaving, green grass making its appearance and looks as though spring had come.

Our correspondent signs himself "Eagle Quill," but does not name his abiding place; we judge, however, it must be somewhere in the foothills or mountain country.

Sugar Maple.

EDITORS PRESS:—I have sent for a lot of sugar maple seeds, and have been advised that they are on the way and may be expected any day. Will you please give me your opinion of the best way to plant the seed, and what kind of soil is best to start them in. c. t.

Red Bluff, March 9, 1872.

You will doubtless find but few of your seed to vegetate under any treatment. The seeds of the different varieties of the maple—botanically, *Acer*—should be gathered immediately on ripening, which is in June and July in the Northern States, and then immediately planted. They germinate in 6 or 8 days, and make a growth of from 6 to 10 inches the same season. They are taken up in autumn, placed in cellars, "heeled in," and in early spring transplanted to the nursery and set in rows three feet apart and 15 inches apart in the row.

The best you can do with your seed will be, to pour hot water that you can just bear your hand in, upon them, and let them remain in it 24 hours; then plant in any good garden or nursery soil, covering them one inch in depth, and you may possibly grow some of them.

Agricultural Appropriations.

A lively debate was had in the Assembly a few days since, when the bill making donations to the various Agricultural Societies came up.

Mr. Wheaton moved to strike out the "Bay District Horticultural Society." It was not an agricultural society at all, he said, simply a horse racing institution, a horse racing and jockey club.

The majority of the House thought different, and the amendment was rejected.

On motion of Mr. Bockius, the Monterey Bay District Agricultural Society was added, with an appropriation of \$2,000; also the El Dorado Horticultural and Agricultural Society.

Mr. Barker, with his avowed temperance proclivities wanted to strike out the Wine Growers' and Brandy Manufacturers' Association, but failed.

Mr. Wilcox asked the House to lay the bill on the table for a few minutes, until he could slip down into the Secretary of State's Office and organize a little society for his own county.

Speaker Shannon said he was too late, he should have organized his society in the forenoon.

WE ARE TALKED ABOUT.—The weekly visits of the Press, are not only accepted, but looked for with interest, the last number fully equal to any received. May it continue to improve and long live, as a blessing to increasing thousands; increasing knowledge, happiness and general prosperity in all the families it enters.

Auburn, Placer Co,

A. C. D. B.

A Representative Seedsman.

James Vick is a name familiar to every household in the United States which makes any considerable pretensions to a knowledge of, or love for, floriculture; and we need no apology for introducing his name or his portrait to the readers of the RURAL PRESS. Mr. Vick is emphatically a representative man in the interesting and delightful branch of industry which he has chosen for his life work. He is a man in the prime of life (in his 53d year), and his home is in Rochester, N. Y., where he has built up a business of mammoth proportions. He commenced life in New York as a printer, with but a limited common school education. For many years his lot was one of unrelenting toil; but he toiled and studied, and wrote occasionally for the newspapers, and never flagged.

An ardent lover of Nature and her productions, he naturally found his way into an agricultural newspaper office (the *Genesee Farmer*), the proprietor of which soon after sold out, and young Vick, who, by his writing, had given evidence of considerable literary

street, and four stories. This entire building is now occupied by Mr. Vick for the transaction of his business, besides an entire story of an adjoining building 60 by 80 feet in dimensions, which he uses for his printing and binding department. He employs upwards of 100 hands about this establishment. In addition to this he devotes 75 acres of land to growing seeds himself, and buys largely from small growers, and imports very extensively of choice varieties.

Some idea of his correspondence may be estimated from the fact that he is in the average daily receipt of over 350 letters, while his daily expenditure for postage stamps in answering business letters, mailing circulars, etc., is within a fraction of \$50. Such is the reward of industry and perseverance in what would at first appear as necessarily a comparatively small and unimportant business.

The Beauties of Flower Culture.

We regard this enterprise of Mr. Vick's, and the cultivation of flowers generally, as no ordinary work. Flower culture has, most emphatically, a moral, humanizing aspect. Flowers have been most happily termed "God's

implanted in the human heart by Infinite Goodness, to elevate and ennoble the last and noblest work of creation. He deserves all the honor and all the success he has won. In what nobler work can man engage than in well-directed efforts to benefit, elevate, and make happy his fellow man.

Budded Trees.

EDITORS PRESS:—I employed a man in September last, to bud a large number of seedling apple and pear stocks for me. The buds were put in two or three inches above the ground, in some instances a foot high, where the tree was large enough to receive the buds. Most of the buds seem to be alive but they do not start as vigorously as the buds do on the part of the tree above the bud, and some don't start at all though they look green. A neighbor tells me I should cut the tops all off. Will you tell me how much I should cut off and how soon it should be done? They are the first trees I ever raised from the seed, and I am not much acquainted with it.

Russian River Valley, March 11, 1872.

Every tree in which the bud appears green, should be cut off immediately, half an inch above the bud; and it should be done with a sloping cut commencing just above the bud on the opposite side and sloping upward to a half inch or a little more above the bud. It would have been much better had it been done a month earlier, or before the buds had shown any signs of starting. This would doubtless have brought out every bud that is alive, but now apparently dormant. Still it will come now if there is any life left in it.

And here we would remark that it is better that every tree which may fail to force the inserted bud, be thus cut off, down to within six inches of the ground, and then take the best upper shoot for budding upon next September or October, or grafting upon early in the spring following. By being so cut off, they will throw up a much stronger and straighter shoot than the seedling growth if left its whole length.

Spring Pruning.

It is time that all the pruning required upon orchard trees the present spring be closed up. Wounds made by the removal of large limbs will heal readily if the pruning be done when the bark peels freely or the juices are in full flow; but still the pruning should be done now if not already done, as the shock or change of direction of the sap is felt less than if deferred to a later period. In pruning the limbs be careful not to break or injure the small spurs that are formed on all the older growth, as these are emphatically the fruit-producing part of the tree.

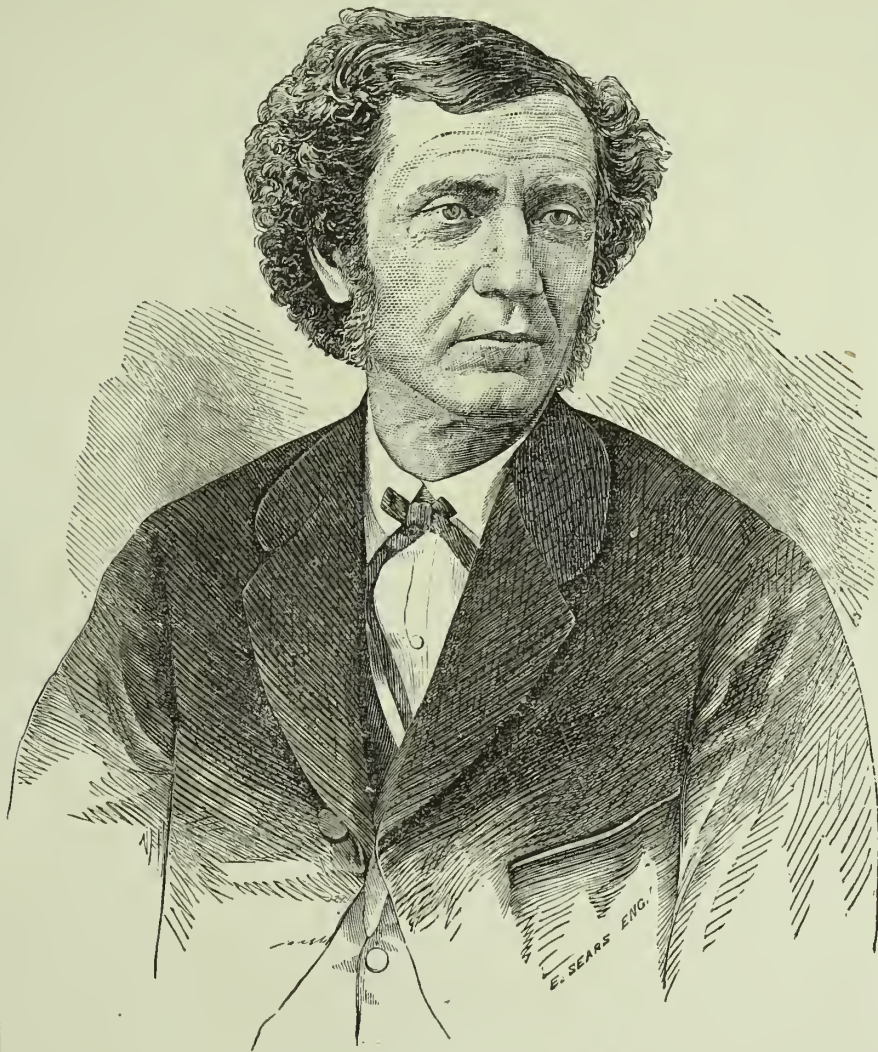
It is a great mistake in our climate to trim a tree to a high standard; the top should always be low and wide spreading enough to completely shade the whole trunk of the tree from the sun. In small trees of two and three years old, if it is desired to cause them to make a more upright growth, in clipping in the ends of the limbs, leave the end bud on the upper part of the limb; if a more spreading form is desired, leave the end bud on the lower side.

BAY DISTRICT HORTICULTURAL SOCIETY.—The spring exhibition of this society will commence May 9th, and continue nine days. A liberal premium list is presented to competitors in plants and flowers, and which ought to draw out the interests and efforts of our principal culturists in that line. A commodious building will be erected for the especial use of the Society, and every effort will be made to secure a full attendance. Competitors for premiums who are not members of the Society, will be required to pay ten per cent. on the amount of premium for which they contend. The judges of award will be chosen by the exhibitors. Over a thousand dollars in premiums will be offered.

BLOODED STOCK AT AUCTION.—By reference to our advertising columns, it will be seen that G. N. Swezy, of Marysville, proposes to sell at public auction on the 26th of the present month, some fine stock, horses and cattle. Swezy's herd of cattle have always carried off their full proportion of premiums from our State Fairs.

"T. H. H.," near Colusa, has our thanks for valuable services. We would thank him to write some facts of general interest about his section of country.

HON. A. A. SARGENT, AND JAS. S. GRINNELL, Chief Clerk of the Patent Office, have our thanks for documents received.



JAMES VICK, FLORIST AND SEEDSMAN

talent, was promoted from the case to the editor's desk. Under his charge the paper soon more than doubled its circulation. Having no proprietary interest in the concern, he finally left it and soon after purchased that well known monthly, *The Horticulturist*, and removed its publication from New York city to Rochester, his chosen home.

Good success also attended this effort; but Mr. Vick was too ardent a lover of flowers, and too much interested in the practical work of their care, to confine his attention as closely to business and literary labors as was necessary in the conduct of such a publication, and decided to dispose of the same and confine his attention exclusively to that industry to which he was so ardently attached, and for which he had fitted himself with unrelenting study and toil.

His start was on a comparatively small scale—his whole stock of seeds and the transactions of his office business requiring a room scarcely twelve feet square. But small things, rightly managed, often exhibit a marvel of growth. Such has been the case with the enterprise undertaken by the subject of this sketch. It is now less than ten years since he gave up the *Horticulturist*, yet during the past summer he has put up one of the finest blocks of buildings, on a corner lot, in the city of Rochester—29 feet front on State street by 175 on another

ornaments," and the place where they are cultivated "a beautiful book writ by the finger of God—every flower and every leaf a letter." They are scattered over the earth to beautify the landscape and delight and elevate the heart of man. They are silent oracles, breathing fragrance and sweetness into the soul. There is no human being so devoid of sense, or so fallen from the paths of rectitude, that has not some lingering admiration for flowers, or upon whose sensibilities these mute witnesses of God's love and goodness may not exert an elevating influence. The love of flowers keeps the heart young, bright and happy. Who ever saw an unhappy home surrounded by flowers?

Geology tells us that the appearance of flowers upon the earth, was just previous to the advent of man. God had no purpose for them at an earlier period. They are but herbage for the animal; while to man they afford only food for contemplation. They lift up his soul, as it were, and bear it away to the higher life—they are beautiful thoughts that come out of the earth to be caught up and transferred to the world of mind.

Mr. Vick, we are told, is a Christian gentleman; how could he well be otherwise? He is doing a Christian work, too, in thus devoting his life to the dissemination of a love for flowers—in enlarging and cultivating a sentiment



Essay on the Red Man.

BY ALEX. POPE, JR.—FOR THE PRESS.

Lo! the poor Indian, whose untutored mind
Sees nought of God in either cloud or wind;
His soul, proud science never taught to stray—
It strayed itself, and now has lost its way.
But simple Nature to his hope has given,
Behind some cloud-tipped hill, a sensual heaven:
Some place where learning cannot grope its way,
Or science cast within one feeble ray.
No fiends torment, no Christians 'stablish law,
But he can rest himself and work his squaw!
To be! contents his natural desire;
He asks no angel's wing to get up higher;
And if he did, no angel of the sky
Would think of taking "Lo" up very high,
But grant the burden of his Indian song—
Go where he liked, and take his "dorg" along!

Household Service.

Miss Julia Colman, in one of her practical and sensible articles in *Hearth and Home*, discourses thus:

"But suppose there be not women enough in a family to do the work, suppose its members be mostly men or boys?"

Well, let them work. Who has any objections? It is no disgrace for any man to wait on himself or on his family, any more than it is for his wife to do so. It always appeared to me a strange kind of gallantry that would not allow a man to stand by and see a woman bring in an armful of wood, or replenish the fuel in the stove, or lift a pail of water without springing to her help, and yet permitted him to go away into another room, or to take a paper and sit down, when he knew she was doing all this and much more, and he doing nothing of importance. When the family all occupy one room for living and working, all such pretense usually dies out, and the wife and mother works on and on, perhaps for hours, while the men folks do absolutely nothing. I have been struck with that state of affairs on Sabbath especially, when the wife and mother who has been working all the week must keep on working still, though she needs rest as much or more than any other member of the family, and that, too, when the work that is wearing her out would be healthful exercise to the others. Why is this? Is the work that women do so degrading that men cannot touch it? I have seen them do it, and do it gracefully, and I honored them for it, and they honored themselves by it. I believe there is no great suffering without some great wrong, and very often the two lie very near each other. Surely it is one of the simplest and most rational solutions of the problem of women's excessive household work, to have men and boys do some portion of it. I see no reason against it, unless there is cast in work, and women are foredoomed to the drudgery.

It seems to me that for their own good mankind should be taught to wait upon themselves in early life. I do not see why a boy should not be taught to make his own bed properly, and keep his room in order, just as much as a girl. He should also be taught to do his own mending. It will save him from mortification and annoyance a great many times throughout life, and it would certainly prevent his becoming that egregious laughing stock in the eyes of all sensible women, the man who justifies himself in getting up a tornado because some woman has omitted to sew a button on his shirt. If a man's equanimity is at the mercy of such trifles, I would advise him by all means to take them in his own hands and learn how to do them for himself. It is the only security for serene independence, for absence from home and accidents of all sorts will happen. Children will be sick, and wives and mothers will be sick, and die off too, for that matter.

Then how much better would things be at home if on Saturday evening each stalwart son should sew on his own missing buttons, and make good the deficiencies of his own stockings, rather than to be gossiping at the tavern, or loafing on the street-corners, or even yawning dutifully in the house around the poor tired mother, who may be obliged to sit up till midnight to do the aggregate of this work for all of them.

I have known cases, too, where a mother of boys only has from severe necessity selected one to help her in her labor, and reluctantly made him the "girl-boy" of the family. But it is always a blessing to him. He becomes commonly the most versatile, the most gentle, and most successful of them all in after life, if if no prejudice against his work has been allowed to warp his feelings. The greatest wrong is in depriving the others of their share of the advantages.

It is no small benefit to a man to be able to know how to manage skillfully all the common details of the preparation of food. It may often give him a comfortable meal when otherwise he would be half starved somewhere in the vicissitudes of life, and no one can tell what is before him. How many a weary traveler has been thankful for such knowledge! I know men who pride themselves upon it not a little. How many poor soldiers in our late war has blessed the fortune, I ought to be able to say blessed the mother, that taught him! Mothers should teach their boys all such things, and expect them to practice them, both for their own good and the good of all the family, so long as they remain at home.

When they are married their wives may pet and wait upon them to their heart's content; but in case of any slight illness, and no help at hand, what a delightful independence it gives a man to be able to get his own breakfast, and put things neatly away, and leave the wife nothing to do but to take care of herself and get well again. It is bad enough to have the wife sick; but any civilized man who has experienced in addition the utter desolation of having the house in complete confusion, and everything at loose ends, without being able to rectify it, ought to appreciate a little practical training in that direction. The service that the boys would perform in the meantime, so long as they remain at home, would relieve a woman's work of any extra tasks, and often render the remaining work endurable; for there is no fear but that there will be work enough left to keep women busy all the day long.

A Story of Stories.

Some ingenious admirer of Dickens produces the following, which seems to contain the names of all the works of the great novelist:

"*Oliver Twist*" had some very "Hard Times" in the "Battle of Life," and having been saved from the "Wreck of the Golden Mary" by our "Mutual Friend," "Nicholas Nickleby," had just finished reading a "Tale of two Cities" to "Martin Chuzzlewit" during which time "The Cricket on the Hearth" had been chirping right merrily while "The Chimes" from the adjacent churches were heard, when "Seven Poor Travelers" commenced singing a "Christmas Carol." "Barnaby Rudge" then arrived from the "Old Curiosity Shop" with some "Pictures from Italy," and "Sketches by Boz" to show "Little Dorrit," who was busy with "Pickwick Papers," when "David Copperfield," who had been taking "American Notes," entered and informed the company that the "Great Expectations" of "Dombey & Son," regarding "Mrs Lirriper's Legacy" had not been realized, and that he had seen "Boots at the Holy Tree Inn" taking "Somebody's Luggage" to "Mrs. Lirriper's lodgings," in a street that had "No Thoroughfare," opposite "Bleak House," where the "Haunted Man," who had just given one of "Dr. Marigold's Prescriptions" to an "Uncommercial Traveler," was brooding over the "Mystery of Edwin Drood."

MARRIED MAN.—There is an expression in the face of a good married man who has a good wife that bachelors cannot have. It is indescribable. He is a little nearer the angels than the prettiest young fellow living. You can see that this broad breast is a pillow for somebody's head, and that little fingers pull his whiskers. No one ever mistakes the good married man. It is only erratic ones that leave you in doubt. The good one can protect all the unprotected females and make himself generally agreeable to the ladies, and yet never leave a doubt on any mind that there is a precious little woman at home worth all the world to him.

If a man or woman wishes to realize the full power of personal beauty, it must be by cherishing noble hopes and purposes; by having something to live for, which is worthy of humanity, and which, by expanding the capacities of the soul, gives expansion and symmetry to the body which contains it.

Beecher on Death.

Beecher discoursed quite lately in his lecture room about the various ideas of death. He did not think it an evidence of special Christian grace to be willing to die. He didn't think it natural for the young and those full of the activities of life to desire to die. It is better to be willing to live and do the duties of life. When Paul said it was better to depart, he was an old man in prison. If an October pippin says it is ready to drop is that any reason a little green apple in June should be ready? It is the business of green apples to get ripe. All the representation of the New Testament about death are full of cheer and hope. For Paul to die was to go to Christ. Dying is not growing short of breath and feeble of pulse; it is flying up to the All-loving Soul of the universe. It is going to sweet companionship.

We struggle on through the world, finding little companionship, but we go to the spirits of just men made perfect. We go where all the conditions lift us up to a realm of nobility. There all is concord. There is no selfishness, no hardness and crudeness and rudeness of revenge; all are working up with one sweet impulse with the great genial creative force of Divine love. These thoughts ring in my soul like the bell of a far off city drawing me thitherward. Dying is the easiest thing men do. The suffering is in life; but, as a rule, men die as easily as a door turns upon its hinges. Dying is going home; not to supineness; not to Oriental luxury, but to supreme activity, where every part is developed and cultured in the realm of love. Bless God for the privilege of dying! My brother Charles, who was always in a dying mood, once congratulated my father upon the fact that he couldn't live much longer. "Umph," said the old man, "I don't thank any of my boys to talk to me in that way. I don't want to die. If I had my choice, and it was right to choose I would fight the battle all over." "Father," continued Beecher, "was a war horse, and after he was turned out to pasture, whenever he heard the sound of a trumpet, he wanted the saddle and bridle."

Want in Life.

There is nothing more fortunate for moderate genius than to be born poor. The "silver spoon" class are a very comfortable people, no doubt, but the great trouble with them is, their education is mainly of this order, and if they don't become very great they are extremely likely to become the very opposite. There is no middle ground for them, for they were not taught to regard any, and consequently, they are, as a general thing, unfit for it. Poverty has helped men to solve some of the greatest problems of life. Half its brave deeds have been a necessity, and the most of its noble sayings have been born of a determined opposition. It does a man good to put him at his wit's ends. Emergencies make men. Any man can be a general or a pilot in a calm; but storms show the metal. Reputation is made more by boldness and will, than by ability and patience. Life is too short to wait for the tide whose ebb leads on to fortune. We must make the most of present opportunities, but we shall hardly do it, unless present opportunities are in the main present necessities. The man who works out these to the fullest extent is the most successful man.

THE MOTHER.—The loss of a mother is always seriously felt. Even though her health may incapacitate her from taking any active part in the care of her family, still she is a sweet rallying point, around which affections and obedience and a thousand tender efforts to please concentrate, and dreary is the blank when such a point is withdrawn. It is like that lonely star before us; neither its heat or light are anything to us in themselves, yet the shepherd would feel his heart sad if he missed it when he lifts his eyes to the brow of the mountain over which it rises when the sun descends.

TRUE DEVOTION does not consist in a long face, regulation sighs, and penitential words; it consists in devout deeds, in charitable words, in a sweet, tender, elevated pure life that influences and betters everyone who inhales the same atmosphere.

BE SOCIAL.—It is advantageous for all, sick or well, to mix among strangers. It breaks up the wearing monotony of home life; breaks up that stagnation of thought, and feeling, and emotion which attends a life of sameness and inactivity.

Young Folks' Column.

A Heroic Cabin Boy.

During one of the wars between England and France, a fine English merchant ship was pursued by a French vessel of war. The English commander, finding capture inevitable, quietly retired to his cabin and resigned himself to his fate. Not so, however, with his heroic little cabin boy, Charles Wager. He had formed a scheme by which he hoped to save his own ship and capture the threatening enemy which was fast bearing down upon them; and he had no sooner communicated his plan to the crew than they most heartily agreed to it, placing themselves under his orders, and awaited with firmness the moment to carry their enterprise into effect. The suspense was of short duration, for the Frenchman was soon alongside, and immediately grappled fast to the unoffending merchant-ship. As Charles had anticipated, the conquerors, elated with the acquisition of so fine a prize, poured into his vessel in crowds, cheering and huzzing, and not foreseeing any danger, left but few men on board their own ship. Now was the moment for Charles, who, giving his men the signal, sprang at their head on board the opposing vessel. While some seized the arms which had been left in profusion on her deck, and soon overpowered the few left on board, the others, by a simultaneous movement, relieved her from the grapplings which united the two vessels. Our hero, now having the command of the French vessel, seized the helm, placed her out of boarding distance, and hailed with the voice of a conqueror the discomfited crowd of Frenchmen who were left on board the peaceful bark he had just quitted, ordering them to follow close in his wake, or he would blow them out of the water—a threat they well knew he was very capable of executing, as their guns were loaded during the chase. They sorrowfully acquiesced with his commands, while gallant Charles steered into port, followed by his prize.

The exploit excited universal applause. The master of the merchant vessel was examined by the Admiralty, when he stated the whole of the enterprise as it occurred, and declared that Charles Wager had planned, and that to him alone belonged the honor and credit of the achievement. Charles was immediately transferred to the British Navy, appointed a midshipman, and his education carefully superintended. He soon after distinguished himself in action, and underwent a rapid promotion, until at length he was created an Admiral, and became Sir Charles Wager.

Spicy Sayings.

A LITTLE boy was recently presented with a toy trumpet, to which he became greatly attached. One night when he was about to be put into his "little bed," and was ready to say his prayers, he handed the trumpet to his grandmother, saying, "Here gran'ma you blow while I pray!"

"WHAT would you do if mamma should die?" asked a lady with whom we have the honor of an intimate acquaintance, of a little three-year-old-girl that we wouldn't take a hundred dollars for. "Well, mamma," was the melancholy response, "I 'spose I should have to spank myself."

Hidden Names of Men.

1. I saw your boy Ben jam in a horse car when it was full of passengers.
2. Near the barn a bystander is looking at horses.
3. A den is sometimes used to secrete stolen goods in.
4. Ambidexterity is the faculty of using both hands equally well.
5. A dun can not make some people pay their just debts.
6. An ell is a measure used chiefly for cloth.

A PLAN IN LIFE.—"What is your plan in life, Neddie?" I asked a small boy, turning from his big brothers, who were talking over theirs, to which he and I had been listening. "What is yours, Neddie?" "I am not big enough for a plan yet," said Neddie, "but I have a purpose." That is good; it is not everyone who has a purpose. What is your purpose, Neddie? "To grow up a good boy so as to be a good man like my father," said Neddie; and by the way he said it, it was plain he meant it. His father was a noble Christian man, and Neddie could not do better than follow in his steps. A boy with such a purpose will not fail of his mark.

DOMESTIC ECONOMY.

Wood Fires.

We often wonder why in an age abounding in inventions for household comfort, the oldest and best of all—the wood fire on the hearth—has almost disappeared. It cannot be on the ground of its greater expense, for that it is but a trifle compared to luxuries we see everywhere. Scrupulous housewives, we believe, object to it as untidy. But from such pharisaic regard for the outside of the cup and platter may we be delivered? Now, in the first place, nothing keeps the air of a room so fresh and sweet as an open wood fire. Its advantages in point of healthfulness over ordinary ways of warming is immense. For a room of ordinary size in this climate it gives amply sufficient heat. And what a wonderful promoter of cheerfulness it is? It is as much better than the open coal fire as that is better than the black hole in the floor called a register. Its voice, as its purrs and crackles and roars, is enough to drive away the worst fit of the blues. Its mounting flames give the cheeriest light in the world. The depths of its glowing coals continually allure and charm the eye. There are not many human beings who are as good company for every mood. After the day's work and fret it brings calm and cheer. It wiles away all troubling thoughts. If the mind is at work, its unobtrusive companionship soothes and aids. When one is weary, he may find restful occupation in watching the freaks of the flames, and listening to their changeable voice. It brightens people and brings them together. To what scenes of friendship and social enjoyment does it lend a unique charm! It is the luxury of luxuries, a thing without which life is incomplete.—*Beecher.*

ITALIAN CHICKEN SALAD.—Make a dressing in the proportion of the yolks of three hard boiled eggs, rubbed fine, one salt spoonful of salt, one of mustard and one of cayenne pepper, one of white sugar, four table spoonfuls of salad oil, and two table spoonfuls of vinegar. Simmer this dressing over the fire, but don't let it boil. Stir constantly while over the fire. Then take a sufficient quantity of the white meat of cold chicken for this quantity of dressing or increase in this proportion to the desired quantity; pull the white meat into small flakes, pile it up in a dish and pour the dressing on it. Take two heads of fine, fresh lettuce that have been washed and laid in water, take out the best part, cut it up and arrange in a heap or around the chicken, heaped in the middle of the dish, and on the top of this ridge place the white of eggs, cut in rings, and laid in the form of a chain. A portion of the lettuce to be helped with each plate of chicken.

LOOK MOST TO YOUR SPENDING.—No matter what comes in, if more goes out, you will always be poor. The art is not in making money, but in keeping it; little expenses, like mice in a barn, when they are many, make great waste. Hair by hair, heads get bald; straw by straw the thatch goes off the cottage; and drop by drop, the rain comes in the chamber. A barrel is soon empty, if the tap leaks but a drop a minute. When you mean to save, begin with your mouth; there are many thieves down the red lane. The ale jug is a great waste. In all other things keep within compass. Never stretch your legs farther than the blankets will reach, or you will soon be cold. In clothes, choose suitable and lasting stuff, and not tawdry fineries. To be warm is the main thing; never mind the looks. A fool may make money, but it needs a wise man to spend it. Remember it is easier to build two chimneys than to keep one going. If you give all to back and board, there is nothing left for the savings-bank. Fare hard and work hard while you are young, and you will have a chance to rest when you are old.

A RETIRED BAKER'S RECIPE FOR BREAD. Take an earthen vessel larger at the top than at the bottom, put in one pint of warm water, one and a half pounds of flour, and a half pint malt yeast; mix well together and set away in a warm place until it raises and falls again, which will be in from three to five hours. Then put two large spoonfuls of salt into two quarts of water and mix with the above rising; then put in about nine pounds of flour and work it well; let it rise until night; then make it into loaves. New and runny flour requires one-fourth more salt than old and dry flour. Bake as soon as light.

Preserved Meats.

The Victoria Meat Preserving Company (Limited), of Melbourne, has succeeded in overcoming the difficulty which has hitherto been experienced in importing uncooked meat from the colonies to this country in such a state as to render it both wholesome and palatable food. Their process is very simple. The meat is first slightly corned, then packed in a tin case, after which melted fat is poured over it, and the interstices being filled up, a tin lid is soldered down—thus effectually excluding air and preventing decomposition. The cooked meats of the same company are also particularly worthy of commendation. A prejudice has been long existent against Australian preserved meats—and not altogether without reason, for hitherto they have been sodden and "done to rags," but we are enabled to testify that the samples now supplied are not overdone, and consequently retain all the nutritious properties of freshly-cooked meat, and are equally agreeable to the eye as they are grateful to the palate. The fat (by which, as a rule, meat may be fairly judged) is not melted into tallow, as is usually the case, but is sweet and good; whilst the jelly within bespeaks the quality of the flesh which it surrounds. The meat is packed in various convenient-sized tins, and is supplied to the trade at a cheap rate. Taking into consideration that the meats are boneless and already cooked, consumers are enabled to effect a saving of nearly 50 per cent. as against butcher's meat, and with this inducement to purchasers, a little effort on the part of retailers is all that is required to remove the objection to this class of food, and not only would the public be supplied with a most wholesome article of diet, but a profitable trade might also be firmly established.

TO MAKE BREAD FROM FLOUR THAT RUNS. Put what flour you need in your pan, and pour enough boiling water over to just wet all of it, but not to make it thin; sprinkle in a teaspoonful of salt and a spoonful of butter; stir it up with a large wooden spoon until sure that all the flour is scalded; then cover, and let it stand till cool enough to add the yeast. So that the yeast is sweet and lively, you can use any kind you prefer—bakers' or home-made. When the flour is sufficiently cool clear to the bottom add your yeast, and give the whole mass a faithful kneading, adding more tepid milk or water, if needed. Knead till the dough cleans from your hands easily; then set to rise. When very light, knead again, put into the pans, and leave it to rise once more; then bake as directed above. By this method "running" flour can often be conquered, and bread thus scalded will be found uncommonly sweet and tender.

BEAN SOUP.—With all thy dinner getting soup. Get into the habit of having it. Soup is to a dinner what an anthem is to a divine service. It is not half the trouble that inexperienced housekeepers imagine it may be. Only a little is required on which to begin a dinner. When once in the way of having it, regularly, you will appreciate the convenience of soup stock, and value it equally with prepared fruits. To make bean soup, clean the beans over night, pour boiling water over them and let them stand until morning. Then place in plenty of fresh water and put over the fire; add a small piece of corned beef with half as much pork; cover tight and skim as needed. When the beans are partially cooked, add sliced carrot, parsley, celery and pepper; boil slowly until done; strain into turcen and cover.—*Moore's Rural.*

CAUTIONARY.—We should let our water pipes run a minute before we take water to drink, or use for cooking in the morning; and in going into a new house, or into one in which water pipes have been just placed, it is better not to use the water for drinking or cooking for at least a month. And on returning home after some weeks' absence, in summer excursions or for other reasons, take the same precautions. Perhaps in these things we find the reason of some persons sickening and dying just after getting into new houses.

RAISED CRUST FOR PIES.—Some persons cannot eat rich pastry, and for their benefit I will give a plain recipe. Take one pound of flour, three ounces of butter, one table-spoonful good yeast, and milk to form a dough. Rub the butter in flour, add the milk and yeast, and set to rise. When light, roll out pretty thin, and line the plates. Put in the fruit, roll out the cover, and set the pies in a quick oven. This makes a good crust.

Good Advice.

Many good people are much troubled by the multiplicity of duties, especially in household matters. They see so much to be done, that they are ever in a worry and hurry, and thus are in danger of doing nothing well, and also leaving many things undone. In their eagerness to do the great things of their calling, they are apt to overlook what seems to be the smaller concerns, which perhaps lie just at hand. They are looking ahead and aloft, and pass over what really ought to be attended to, and which, if attended to and thus put out of the way, would lead on naturally and quietly to greater works. These little things may be indispensable to the accomplishment of the greater. They may be the little stones which together make up the building. They may be the first rounds of the ladder, leading up to loftier heights of achievement.

Now let such persons consider what the great German poet, Goethe, said—and he hardly uttered a wiser one—"Do the thing that lies next you." Be it little, do it. It may be great in its necessary relation to something else. Neglect not the present, the immediate thing. The person who adopts this rule will do a world of work—a world of good. He will begin at home, in his little circle, and so branch out as each day gives new and, perhaps, wider opportunities.

CHICKEN JELLY.—For chicken jelly, take a little chicken, cut it up into small pieces; bruise the bones and put the whole into a stone jar, with a cover that will make it water-tight. Set the jar in a large kettle of boiling water, and keep it boiling for three hours. Then strain off the liquid, and season it slightly with salt, pepper and mace, or with loaf sugar and lemon juice, according to the taste of the person for whom it was intended. Return the fragments of the chicken to the jar, and set it again in a kettle of boiling water. You will find that you can collect nearly as much jelly by the second boiling. This jelly may be made of an old fowl.

TO KILL LICE.—In every issue some one is inquiring how to kill lice. Having had six or eight years' experience with lice on human as well as brute creation, I find nothing like salt. Wash horses, colts, cows or calves with a brine as strong as it can be made. It is a dead sure shot.—P. Green, Bath, N. Y.

Mechanical Hints.

How to Use Grindstones.

1st.—Don't waste the stone by running it in water; but if you do, don't allow it to stand in water when not in use, as this will cause a soft place.

2d.—Wet the stone by dripping water on it from a pot suspended above the stone, and stop off the water when not in use.

3d.—Don't allow the stone to get out of order, but keep it perfectly round by use of gas pipe, or a hacker.

4th.—Clean off all greasy tools before sharpening, as grease or oil destroys the grit.

5th.—Observe: When you get a stone that suits your purpose, send a sample of the grit to the dealer to select by; a half ounce sample is enough, and can be sent in a letter by mail.—*Franklin Journal.*

BROWN TINT FOR IRON AND STEEL.—Dissolve in four parts of water, two parts of crystallized chlorine of iron, two parts of chloride of antimony and one part of gallic acid, and apply the solution with a sponge or cloth to the article, and dry it in the air. Repeat this any number of times, according to the depth of color which it is desired to produce. Wash with water and dry, and finally rub the article over with boiled linseed oil. The material thus receives a brown tint and resists moisture. The chloride of antimony should be as little acid as possible.

TO DRAW A CURVE.—A plan but little known among draughtsmen, and most efficient for drawing fair curves, is the following: Cut a strip of soft pewter similar to that used for covering bar counters, about one-sixteenth of an inch thick, and from one-eighth to three-sixteenths of an inch wide, the length of the longest curve required. Dress it straight, and smooth the edges with a file. By drawing the strip through the closed fingers of the left hand, or over the thumb, a very regular curve may be obtained, which can be altered at will till it matches the line to be drawn or copied. For fine or quick curves a slighter strip should be used.—*Cabinet Maker.*



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Daily Weather Record,

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK
ENDING WEDNESDAY, MARCH 6, 1872.

Place of Observation.	Date.	Observation taken at 9 A. M.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Wind at 1000 ft.	Amount of Precipitation.	State of Weather.
San Francisco.	Thu...7	30.36	59.3	E.	6	Fresh	1-4	1-4	Fair
	Fri...8	30.23	59.3	E.	15	Brisk	4-4	4-4	Cloudy
	Sat...9	30.11	59.3	S.W.	7	Fresh	4-4	4-4	Threat'g
	Sun...10	30.09	59.3	Cal.	4	Gentle	4-4	4-4	Threat'g
	Mon...11	29.85	59.3	S.W.	4	Gentle	4-4	4-4	Threat'g
	Tu...12	30.06	59.3	S.W.	6	Fresh	4-4	4-4	Clear
	Wed...13	30.35	59.3	Cal.	4	Gentle	4-4	4-4	Clear
San Francisco.	Thu...7	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Fri...8	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Sat...9	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Sun...10	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Mon...11	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Tu...12	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
	Wed...13	29.79	19.61	E.	4	Gentle	4-4	4-4	Clear
San Francisco.	Thu...7	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Fri...8	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Sat...9	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Sun...10	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Mon...11	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Tu...12	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
	Wed...13	30.09	34.79	N.	6	Fresh	4-4	4-4	Clear
San Francisco.	Thu...7	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Fri...8	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Sat...9	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Sun...10	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Mon...11	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Tu...12	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
	Wed...13	29.77	27.99	N.	27	Brisk	1-4	1-4	Clear
San Francisco.	Thu...7	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Fri...8	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Sat...9	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Sun...10	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Mon...11	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Tu...12	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
	Wed...13	29.74	34.79	N.	23	Brisk	4-4	4-4	Clear
San Francisco.	Thu...7	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Fri...8	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Sat...9	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Sun...10	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Mon...11	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Tu...12	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
	Wed...13	29.82	36.55	S. E.	16	Brisk	4-4	4-4	Cloudy
San Francisco.	Thu...7	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Fri...8	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Sat...9	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Sun...10	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Mon...11	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Tu...12	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy
	Wed...13	30.30	27.88	E.	15	Brisk	3-4	3-4	Cloudy

Rain, Crops, Etc., in Plano, Tulare County.

PLANO, Tulare County, Cal., Feb. 28, 1870.

EDITORS RURAL PRESS:—I did not prepare a report of January, because of being away from home at the proper time. Will now write for both months. The average of thermometer for January was 41° at 7 A. M.; 56° at 2 P. M.; the maximum being 61° on 8th at 2 P. M.; minimum, 31° at 7 A. M. of 26th, caused by a cold north breeze that made a thin crust of ice on tubs, and cut potato vines, etc., the same as is reported from Santa Barbara County. We had storms on the 1st and 9th, giving a total of 1.35 for the month, making the soil quite wet. Then came a dry spell to do up hoeing, planting, etc. In and before the last of the month all our potatoes, field and snap beans and corn were planted. February average temperature 49° at 7 A. M.; 64° at 2 P. M.; maximum, 74° on 21st and 22d at 2 P. M.; minimum, 42° at 7 A. M. on 6th. Only three light showers until 24th, when a storm gave 1.40; another storm on 27th gave .15. Has cleared off now, with prospect of lasting some days, leaving us a total for the month of 1.75 inches; and though only 8½ inches for the winter, it has come in such good shape that the soil is apparently wet enough to perfect most any crop, and gopher holes have caved in all over the plains. Barley, drilled in only 25 lbs. seed per acre, has blades a foot high, and appears plenty thick enough. I never saw vegetables, especially peas, make such a growth, even in our manured gardens in Pennsylvania. The freeze on January 26th cut off our young crop of peas, but they will be ready for the table again next week. Beans and corn are up; tomato plants set out; cucumbers, squash, and some melons planted. Tell any of your readers who have never tried spinach, to plant some in a rich place. I think it the best of greens, and so easily cooked; boils in less than ten minutes. Yours, etc., ISAAC B. RUMFORD.

RECEIVED.—The "Bulletin" of the California Vine Growers' and Wine and Brandy Manufacturers' Association. This Bulletin contains besides a list of the officers and standing committees, the following interesting reports:—On the cultivation of the grape and pruning, by I. N. Hoag. Observations on the planting and pruning of the vine, by J. Strentzel, Martinez. Planting and pruning the vine, by J. R. Nickerson, Placer. The manufacture of brandy, by George Johnson and Robert Chalmers, Sacramento. Manufacture of brandy, by Henry M. Naglee, San José. Wine making and fining, by J. Knauth, Sacramento. On wine making, by J. R. Nickerson, Placer. Statistics, by George Johnson, G. W. Applegate, I. N. Hoag, L. R. Chamberlain, S. L. Wilson and J. Clayton. Choice of vines for wine making, by John A. Lockwood, and The best grapes for general culture, by J. R. Nickerson, of Placer; the whole making a really valuable compilation of the ideas of some of the best practical and experienced men in the State, in the line of their profession.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., March 14.

FLOUR—We note a fair local demand with a limited inquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 4,000 do. Cal. superfine, and 2,000 Oregon extra. We quote prices as follows: Superfine, \$5.00@5.25; extra, in sacks, of 196 lbs. \$5.75@6.25. Standard Oregon brands, extra, may be quoted at \$6.00@6.25.

WHEAT—The market is quiet but owing to light demand, prices have declined. Sales aggregate 15,000 sacks fair to choice at \$2.00 @2.12½ per 100 lbs. Quotable at close at \$1.90 @2.10 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 9d. and 12s. per cental.

BARLEY—Market quiet. Sales embrace 10,000 sacks ordinary coast to choice bay, at \$1.37½@1.55, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.55@1.70 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.80 for yellow and \$2.00 for white per 100 lbs.

CORNMEAL—Is quotable at \$2.50@3.00 per 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.35 per 100 lbs.

RYE—According to quality is quotable at \$2.12½@2.20 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Selling at \$27.50 per ton from the mill.

MIDDLINGS—For feed, are selling at \$32.50 per ton from mills.

OIL CAKE MEAL—Steady at \$35 from the mill.

HAY—Receipts have been fair, and prices at close are \$15.00@22.00 for fair to choice per ton.

HONEY—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$4 per doz.

POTATOES—Receipts have been heavy during the past week. Range for best kinds is between 60@75c, and 40@55 for common.

HOPS—The range is 50@65c.

HIDES—During past week 2,000 Cal. dry sold at 19@21 and 1,176 salted at 9@9½c.

WOOL—Speculators still continue to purchase coming clip at 35@40. Spring clip will soon begin to come forward and the market is expected to be lively.

TALLOW—Market firm at 8½@9½c. per lb.

SEEDS—Flax 3c.; Canary, 6@7½c.; Alfalfa, 16@17c.; Mustard—California Brown, 3@6c.; Cal. White 3¼@4½c. per lb.

PROVISIONS—California Bacon 13@14c.; Oregon, 13½@14c.; Eastern do. 12½@13c.; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14½@15; Oregon, 15½@16c.; California Sugar-cured Hams, 16½@17c.; Oregon do. 17@18c.; Eastern do. 17@18c.; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.75@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.30@3.50; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$3.00@4.00 per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c.; Pecan, 25c per lb.; Cal. Walnuts, 14@15 Hickory, 12c; Brazil, 16c; Chili Walnuts, 11c.; Italian Chestnuts 25@35c.; Eastern Chestnuts, 12@20c.; French Almonds, 22@25c.; Princess Almonds, 30@35c.; Cocoanuts, \$6.00@7.00 per 100.

FRESH MEAT—Market shows a decline since last report. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 12@14c. per lb. do. 2d quality 9@11c. per lb.; do. 3d do. 5@8c. VEAL—Quotable at 8@12½c.

MUTTON—7½@8c. per lb.

LAMB—Scarce at 12@15.

PORK—Undressed grain-fed is quotable at 7½@8c. dressed, grain-fed, 10½@11½c. per lb.

POULTRY—Live Turkeys, 20@22c. per lb.; dressed, 22@25c. per lb.; large Hens 9½@10½c. Roosters, \$8.00@8½c. per dozen; Spring Chickens, \$8.00@9.00; Ducks, tame, \$11.00@12.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in good supply; it may be quoted at 22½@30c; California firkin butter, 20@30c. Pickled, 20@25c. Eastern firkin, 20@30c. per lb.

CHEESE—California, 15@19c. Eastern, 20c. per lb.

Eggs—California fresh, 28@30c. per doz.

LARD—California 12½@13½c.; Oregon in bbls. and kegs 12½@13c.; Eastern in cases 14@14½c.; do in tcs. 12½@13c. per lb.

FRUIT.

Tah. Oranges, M. 20 @25c. Cal. do M \$18 @25c. California do .. 10 @30c. Bananas per bunch 2 @30c. 3 @30c. Limes, M. 30 @30c. Apples, eating, bx 2 @30c. 3 @30c. Austin Lemons, M. 40 @40c. do cooking, bx 1 @30c. 2 @30c. Sicily do M. 8 @40c. Pears, box .. 1 @30c. 2 @30c.

DRIED FRUIT.

Apples, per lb. 6 @8c. Pitted, do 2 @22c. Raisins, per lb. 10 @15c. Black Figs, per lb. 8 @10c. Apricots, per lb. 8 @10c. White, do 15 @20c. Plums, per lb. 5 @7c.

VEGETABLES.

Cabbage, per lb. 12 @15c. Marf. Squash, ton \$17 50 @20 00. Garlic, per lb. 12 @15c. Asparagus, per lb. 12 @15c. Rhubarb, per lb. 12 @15c. Tomatoes, per lb. 12 @15c. Green Peas, per lb. 15 @20c.

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head.

BAGS AND BAGGING—The market is firm for all kinds. Burlap sacks 16½@17; Flour sacks 10½@11c. for qrs. and 16½@17c. for hfs. Standard Gunnies are jobbing at 21c@22c.; Wool 75.

BOOTS AND SHOES—We note an improved inquiry and an active spring business is expected in this branch of trade. Newhall & Co. held their first spring trade sale on the 11th and the 13th inst. Terms cash for sales under \$300, 90 days on all sums over

that amount. California goods sold well as did Eastern.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do dressed \$25; Spruce \$17@18; Redwood 16@30 for rough and dressed, and 12 for refuse. We quote Laths at \$2.75@3.00; Shingles \$2.50 @2.75. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, \$31 00 to \$32 50
Refuse do do 20 00 to 21 50
Merchantable surfaced and rough clear 28 00 to 30 00
Refuse surfaced and rough 18 00 to 20 00
Merchantable beaded flooring 28 00 to 30 00
Refuse do do 18 00 to 20 00
Merchantable rough 15 00 to 16 00
Refuse do do 11 00 to 12 00
Fancy Pickets 22 50 to 25 00
Rough Pickets 13 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20½c; Guatemala 19c; Java 25½c; Manilla, 19½c; Rio 19½c@20. Ground Coffee in cases 30c.; Chicory, 12½c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 19c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c@5½c, and in cases at 9c; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$13; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.62½, per ream.

PAINTS—Red and White Lead at 8@12½c; Whiting, 2½c.; Chalk 2c.; Paris White 3c.; Ochre 3@3½c.; Venetian Red 3@5c.; Litharge 9@11c. per lb.

RICE—Sales of China No. 1 at 8c. and No. 2 at 7@7½c per lb; Siam, quotable at 6½c@7½c in mats; Carolina Table, 10@11; Hawaiian, 8½@9c per lb.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Yellow Coffee and Golden C. 10½c; Hawaiian 7½@10½c as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@5¼; Carmel Island, in bulk, \$14; Fine Liverpool, \$22.50@23.00 per ton.

SOAP—The prices for local brands are 5@10c, and Castile, 12@13c per lb.

TEA—We quote Hyson at 60@75c; Gunpowder and Imperial, 95c@1.05; Young Hyson and Moyune, 90c@1.15; Foo Chow Oolong, 50@90c; Pouchong, 37½@45c; Souchong, 50@75c; Japan 40@75c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, March 14, 1872.

MISCELLANEOUS.						
Butter, Cal. fr. do	35	@	45	Wheat, sds, 22x36	12	@ 13
Pickled, Cal. fr. do	30	@	35	Potato G's Bays	22	@ 24
do Oregon, do	25	@	30	Second-hand do	15	@ 15
Honey, per lb.....	25	@	30	Deer Skins, do	15	@ 21
Cheese, per lb.....	25	@	30	Sheep skins, w/ on	50	@ 75
Eggs, per doz.....	35	@	40	Sheep skins, plain	12½	@ 25
Lard, per lb.....	18	@	20	Goat skins, each	25	@ 50
Sugar, cr., 6½ lb. do	10	@	13	Dry Cal. Hides	18½	@ 19
Brown, do. 10 lb. do	10	@	13	Doer Skins, do	15	@ 21
Beet, do. 10 lb. do	10	@	13	Doer Skins, do	15	@ 21
Sugar, Map. do	25	@	30	Salted do	9½	@ 20
Plums, dried, lb.	15	@	20	Codfish, dry, lb.	10	@ 12½
Peaches, dried, 20	20	@	30	Live Oak Wood	9 50	@ 10 00
Wool Sacks, new	67½	@	70	Tallow,	8½	@ 10
Second-hand do	67½	@	70			

PRODUCE, ETC.			
Flour, ex. 3 bbl. 6 75	@	—	Barley, cwt. 1 50 @ 1 65
Superfine, do. 6 00	@	—	Beans, cwt. 3 50 @ 1 50
Corn Meal, 100 lb. 3 00	@	—	Doer Skins, do 15 @ 21
Wheat, 100 lbs. 2 40	@	—	Doer Skins, do 15 @ 21
Oats, 100 lbs. 1 75	@	—	Potatoes, per cbl 75 @ 1 24

FRUITS, VEGETABLES, ETC.						
Pine Apples, 100	@	80	Tomatoes, 7 b...			25
Bananas, per bunch	40	@	Cress, per doz bun	20	@	25
Cal. Walnuts, do	10	@	Dried Herbs, b'h	25	@	50
Cranberries, per lb.	10	@	Garlic, per lb.	5	@	10
Cranberries, O. 1	@	23	Green Peas, per	20	@	25
Pears, table, per bx	100	@	Lettuce, per doz.	12	@	25
Plums, Cherry, 6	@	8	Mudrooping, do	12½	@	15
Oranges, per 1000	30	@	Horseradish, do	20	@	25
Lemons, per 100	50	@	Okra, dried, per	50	@	75
Limes, per 100	20	@	Pumpkins, do	3	@	4
Figs, dried, per lb.	65	@	Parsnips, 1 bunch	20	@	4
Asparagus, wh. 15	@	25	Parsley, 1 bunch			25
Artichokes, doz. 75	@	10	Pickles, per gal.	50	@	25
Brussel's sprts. 10	@	12½	Rhubarb, per b...			75
Beets, per doz.		25	Radishes, 1 bunch	15	@	25
Potatoes, New York		6	Red, do			20
Putatoes, sweet,		6	Marrows, doz.			2
Broccoli, per doz. 150	@	20	Rhubarb, doz.			4
Cauliflower, per		150	Per Lima, shl.	6	@	8
Cabbage, per doz. 10	@	150	Spinage, per bskt.	25	@	50
Carrots, per doz.	10	@	Salsify, per bunch	12	@	25

CLUBS FOR THE RURAL PRESS.

If you believe a club of ten names can be had in your neighborhood for the PACIFIC RURAL PRESS, do not wait for some one else to lead off, but secure them yourself. We will send the eleventh copy free on receiving \$3 each for a club of ten. Names may be added afterwards at the same rates. If you do not succeed in getting ten names at once, send us a less number and \$3.50 each. If you afterwards complete the club, we will allow discount sufficient on the last names to make the whole \$3 each. The names of all club subscribers will be addressed at this office. Subscription blanks and sample papers sent free to those desiring to get up clubs. Postmasters, or agents, who are willing to solicit subscriptions or renewals, will please send for lists and rates of commission.

DEWEY & CO., Publishers.

Send us Communications.—They will be respected. If you have not time or the experience to write finished articles, send us facts brief and plain. We will take care of them. Remember that we will improve themselves with others by use of the pen. Officers of societies, clubs and meetings, please report.

GIVE YOUR OLD ADDRESS when you want the paper sent to a new one. We cannot afford to look over several thousand names to stop it at the former P. O.

THE VISALIA DELTA is one of the best printed and well circulated interior journals published in the rich agricultural and rapidly developing valley of Tulare. By E. M. Dewey, Visalia.

Dickey's Liquid Rennet,

For making Slip, Curds, Whey, Custard, Etc., and for preparing INFANTS' FOOD.

It is prepared from the lining membrane of the stomach of the calf, and is invaluable as a corrective to render cow's milk digestible when it is found to disagree with the tender infant. Full directions accompany each bottle, which is sufficient for eight gallons of milk.

For sale by all druggists and grocers. 1v3-3m

\$5 to \$20 PER DAY and NO RISK.—Do you want a situation as salesman at or near home to introduce our new 7-strand White Wire Clothes Lines, to last forever. Don't miss this chance. Sample Free. Address Hudson River Wire Works, 75 William street, N. Y., or 1 Dearborn street, Chicago, Ill. 23v1-12mbp

LADIES DESIRING TO PROCURE A FIRST-CLASS SEWING Machine against easy monthly installments may apply to No. 294 Bowery, 157 E. 26th, 477 9th Ave., New York Good work at high prices if desired. 21v1-12mbp

A PACKAGE OF FLOWER SEEDS will be sent free to every applicant enclosing two stamps for W. B. Dimon Jr. & Co.'s Catalogue of Vegetable and Flower Seeds, Budding Plants and Flowering Bulbs; Brooklyn, N. Y. mar2-4t

SALE OF

BLOODED STOCK.

The undersigned will sell at PUBLIC AUCTION, at his farm, three miles north of the city of Marysville, on

Tuesday, March 26, 1872,

Twenty Head of Well-Bred Horses, Old and Young, and

EIGHT YOUNG DURHAM BULLS and FOUR DURHAM HEIFERS.

All the above Horses and Cattle have been bred by the undersigned with the greatest care. The undersigned has for years

Taken the Principal Premiums

At the State Fair on his cattle.

TERMS OF SALE.—Coin upon ninety days time, with approved security, or cash at 5 per cent. discount on amount of bid.

G. N. SWEZY.

Marysville, March 1st, 1872.

mar16-2t

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England. Also ten Rams, and thirteen Ewes and Lambs, Silesian Sheep.

Also five hundred Calves of the best milk stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. ROBT BECK, Secretary 5v3tf State Agricultural Society, Sacramento.

R. IRELAND,

The old Pioneer Broom Factory—Established August, '66. No. 82 J street, between Third and Fourth Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubbs and Pails. 16v2-3m



CORNER GEARY AND STOCKTON STREETS, S. F.

Young and Middle-aged Men and Boys may enter on any week day, and in addition to all the advantages to be enjoyed at any other Business College, have access to the General Lectures and Literary Exercises of the University. Our Diploma is received as conclusive evidence of proficiency by the Bankers, Merchants and business men. 11v3-tf

PURCHASERS please say advertised in Pacific Rural Press.

BLAKE'S PATENT STEAM PUMPS.

WHAT IS SAID BY THOSE WHO USE THEM.

MESSRS. BERRY & PLACE, San Francisco.—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump, our company purchased of you, we would say in all sincerity that the pump has exceeded our expectation. It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is simple, perfect and PERFECT in its construction. We have found it entirely satisfactory and just the pump we needed for our work. Yours, respectfully W. C. HOLLY, Pres't Salem Water Works.

SALEM, Oregon, January 16th, 1872.

MESSRS. BERRY & PLACE, San Francisco.—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump throws it all out of the shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute. It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our company, as a reference, you are at liberty to do so. Very resp'tly, GEO. FELLOWS, Supt. Phenix Quicksilver M. Co.

PHENIX MINE, Napa County, January 16th, 1872.

MESSRS. BERRY & PLACE, San Francisco.—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommendations. Yours, Etc., STARR BROS. & CAMPBELL.

OFFICE STARR MILLS, VALLEJO, Cal., January 13th, 1872.

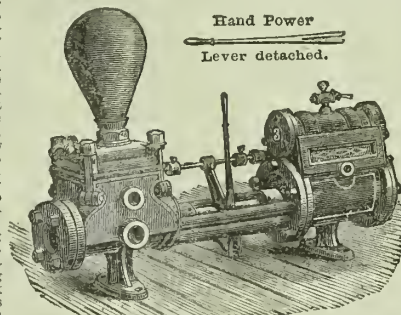
MESSRS. BERRY & PLACE, San Francisco.—Gentlemen: We have used a No. 6 Blake Steam Pump now for about two years, both as a Tank Pump and as a Fire Pump in case of need; and it has given excellent satisfaction. It suits us in every respect. Very respectfully, R. F. PECKHAM, Pres't San Jose Woolen Co.

BELMONT, Cal., February 6th, 1872.

MESSRS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of Berry & Place, by Mr. Ralston, I will say, that it gives ENTIRE satisfaction, even working as it now is, where no other Pump could; for it is at present six feet under water, yet it does its work PERFECTLY. Yours, Etc., J. E. BUTLER, Supt. Water Works and Engineer at W. C. Ralston's.

BLAKE'S PATENT STEAM PUMP.

These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for nearly three years, and we are willing every one in use may be referred to; every Pump will speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows:



Mining and Fire purposes; in Breweries, Tanneries, Sugar Houses, Factories, Mills, Lumber Dries, and as Boiler Feeders, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the cheapest and best Pump that can be used. It is offered to the public as the most perfect independent steam Pump ever invented. Forty different sizes are made, capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to any class of work that may be required. Every pump will be warranted to perform the work required of it by the purchaser, or it may be returned and the money will be cheerfully refunded. The Blake Pump was awarded a silver Medal at the exhibition of the Mechanical Institute, San Francisco, and State Fair at Sacramento, as being the best Steam Pump on exhibition. The agents have recently imported several of the largest-sized Mining Pumps for water works, and deep mines, and will be pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by TREADWELL & CO., Machinery Depot, old stand, corner of Market and Fremont streets, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.

It has no Cams or Rotary Complex Valves. It has stood the test wherever tested.

IT IS SIMPLE, COMPACT, DURABLE, AND POWERFUL.

Manufactured by Geo. F. Blake & Co., Boston, who build and have on hand a larger variety of Steam Pumps than any other concern in the country, embracing forty different sizes, and capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to every description of work required. Send for circular and prices.

The largest stock in the country at the Machinery Warehouse of

TREADWELL & CO.,

Manufacturers' Agents, corner Market and Front Streets, San Francisco.

Machinery Depot for Miners, Millmen, and Engineers' Supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics' Miners' and Farmers' Tools; Sturtevant's Blowers, Turbine Waterwheels, Etc., Etc. 6v2t-cowbp

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

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They are made of the best material, and every Plow warranted.
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These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

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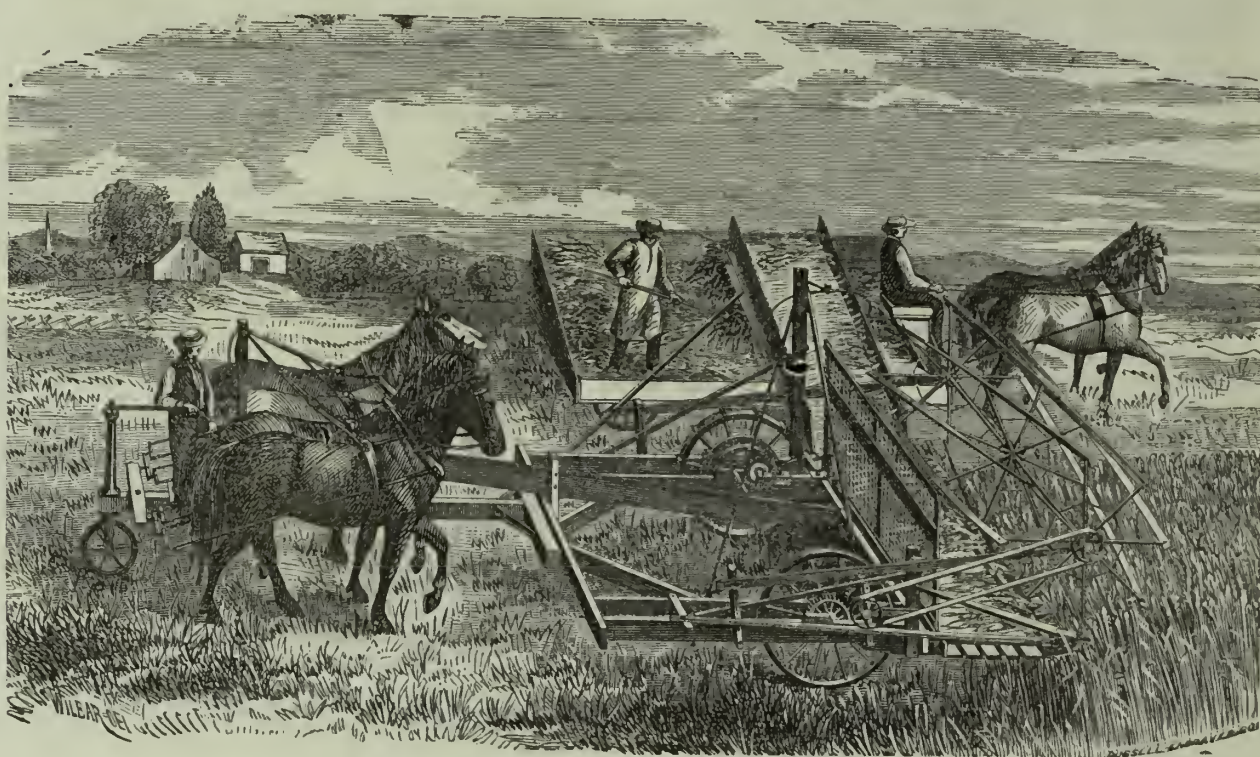
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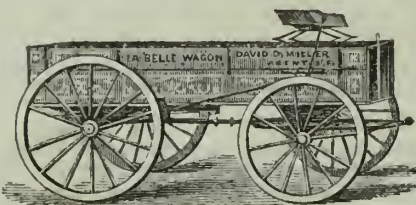
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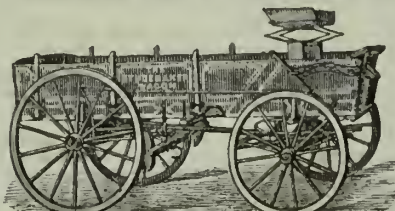
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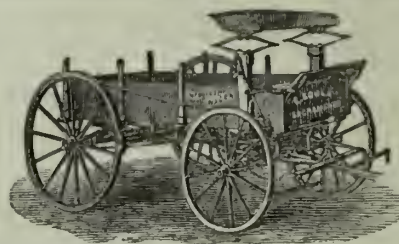
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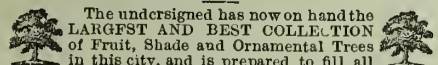
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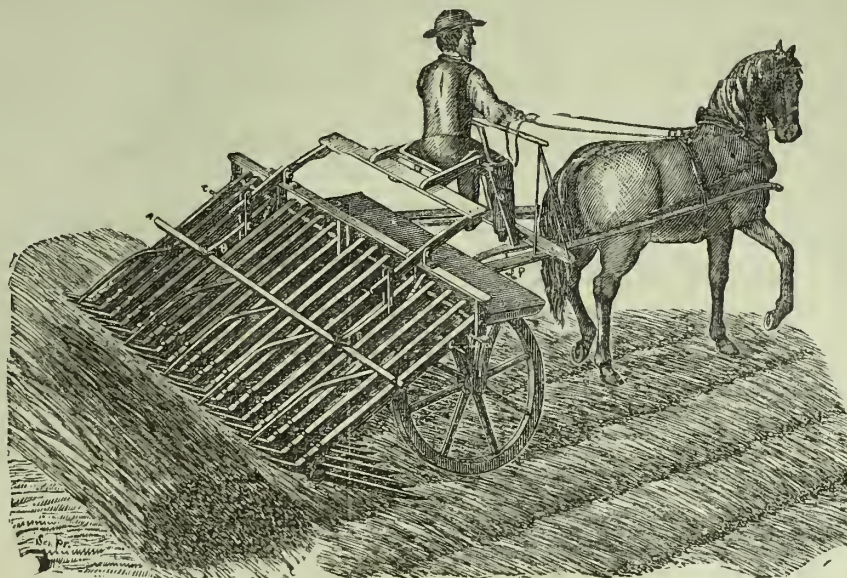
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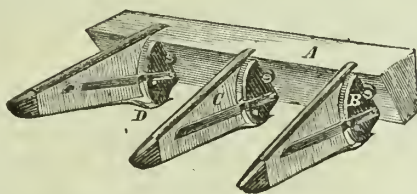
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Seeds forwarded by mail to any part of the United States at 8 cents per pound.

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Volume III.]

SAN FRANCISCO, SATURDAY, MARCH 23, 1872.

[Number 12.]

Settlement and Development of the Gallatin Valley.—Concluded.

[By our Traveling Correspondent.]

We give, herewith, a portrait of Col. Leander M. Black, of Montana, engraved at this office from a photograph furnished by one of the Colonel's friends at Bozeman, his place of residence. Col. B. is emphatically called a self-made man. He left his native State (Kentucky) in 1859, with all his worldly effects in a satchel, and started for the "Far West," bringing up in Colorado, where, by the spring of 1866 he had accumulated a fortune of \$250,000, and reached a seat in the upper branch of the Territorial Legislature. About this time he left Colorado for Montana, which he has adopted as his permanent home, and where he has added largely to his possessions; but what is of far more importance, he has also been so fortunate and honorable in his dealings with his neighbors, and his public and private life has been so uniformly faultless that he has secured the friendship and attachment with all whom he has come in contact.

No man in the Territory has manifested more energy and public spirit in advancing the general interest of that region than has the subject of this sketch. At a critical junction in the history of the Territory, and when large numbers of hostile Indians were threatening its destruction, and when in response to a call for troops, men were found in abundance, but no means for feeding them, Col. Black came forward promptly, saying, "I will feed all who will fight." He was as good as his word, and long trains of provisions were soon rolling along the road toward the Yellowstone, to feed the volunteer protectors of Montana. In this prompt act of patriotism the Colonel expended about \$150,000, not a dollar of which has yet been returned to him by the Government, whose duty it was to protect the citizens of the Territory at the national expense. As he is now only 38 years of age, and if his financial affairs succeed in the future as well as they have in the past, he bids fair to become one of the millionaires of the country.

Col. Black saw that tenement accommodations in Bozeman City were insufficient—immediate expansion was evidently a necessity of the town. Other local capitalists hesitated to invest in buildings while they could get 3 per cent. a month on their money in other channels—the prevailing interest rate in Eastern Montana. They would prefer purchasing ground and letting it lie unimproved if they could not loan at that figure. Thus they would take from, without directly adding to the general wealth. No such a cramping, strangling policy as this found countenance from Colonel Black. Bozeman needed more houses, and he at once bought a large tract of land lying contiguous to Main street, and began the work of building. All the carpenters in the country were put to work, and the sawmills were taxed to their utmost capacity. Now, Black street, Bozeman, is one of the finest residence avenues of the frontiers, some of its structures being of a character that would be creditable to any city; and it gratifies me to be able to say, every finished house is occupied, and those unfinished are all engaged. Besides these improvements, Col. Black has caused the erection of and owns some fine buildings on Main street. His own residence, represented in our cut, is a neat and modest little cottage, situated on the street which bears his name. The house is in a pleasant location, and back of it is the warehouse where goods are stored for distribution to the Indians of the Yellowstone.

The enterprise of Col. Black is not confined

to Bozeman—it embraces the whole of Eastern Montana. In the Yellowstone Valley—three years ago a forbidden region to white men—he has a large mercantile house, and another in the Musselshell Valley, further north. And he is now giving his attention to the opening of a wagon road from Bozeman City to the mouth of the latter stream, which it is thought will virtually give the metropolis of Eastern Montana control of the navigation of the Upper Missouri.

Fort Ellis.

Another powerful influence in inducing settlement and development in the Gallatin Valley was the establishment, in the fall of 1867, of the military garrison of Fort Ellis, at the mouth of Bozeman Pass, three miles southeast of Bozeman. And thus, too, was the General Government at last forced to acknowledge the necessity of having called into the field the Territorial militia, which, indeed, had been done by the express order of General Sherman. After the establishment of Fort Ellis the settlers pushed forward their enterprises with greater confidence, feeling that in the future they would enjoy the fruits of their industry in peace and security; and a steady tide of immigration again set in, stimulating all branches of industry. From that time forward the history of the Gallatin Valley, if we except an occasional Indian "scare" in the most exposed places, has been a career of uninter-

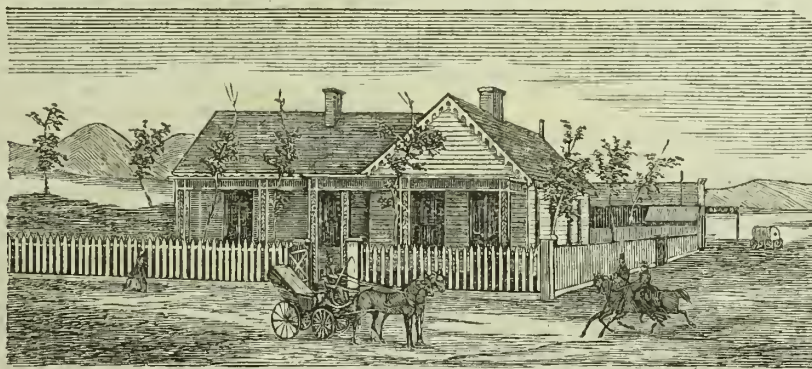


COL. L. M. BLACK.

H. N. Maguire, a journalist well and favorably known throughout the Territory, as editor. The *Avant Courier* as successor to the *Pick and Plover*, has a local patronage enjoyed by but few mountain journals. Capt. Joseph Wright, one of the best printers on the frontier, and a good writer is the conductor of the *Courier*, while Mr. Maguire, the projector of the *Pick and Plover*, finds a more congenial field for his energy in the real estate business.

A General View.

Now let us take a general view of the condition of affairs in the Gallatin Valley. Between five and six hundred farms are under as high state of improvement as could be expected, considering the time they have been cultivated, many of them boasting thriving young orchards and first-class barns and dwelling houses. Maguire's Bozeman Land Agency is crowded with applicants to make additional land entries. In the last year the property valuation of the county has almost doubled; in the last year and a half the population of Bozeman has nearly trebled; and permanent settlements are rapidly being made in the adjacent valley of the Yellowstone. I have frequently spoken through your columns of the general productiveness of those regions; no better quality or more bountiful yields of wheat, oats, barley and rye, or root crops, are produced anywhere in the temperate zone. That the great Northern Pacific Railroad will



RESIDENCE OF COL. BLACK, BOZEMAN, MONTANA.

ed prosperity. The garrison opened a new and nearer market for the products of the farm, and has had much to do with making Bozeman as it now is, and for the last four years has been, one of the best cash vegetable and dairy markets in the Territory; it seemed to open a demand for the surplusage over and above what was called for by the miners and trappers scattered along the Yellowstone, so that since then only flour, grain and bacon have been shipped in large quantities from the Gallatin Valley to the more distant mining camps.

Early next spring Fort Ellis is to be increased from a four-company to a twelve-company post—orders for more extensive barracks, with that object in view, having already been promulgated. The garrison, thus increased, will undoubtedly be permanent for several years, or until some time after the completion of the Northern Pacific Railroad, as it is the natural base for all military operations between eastern Montana and the Dakota border. And when, finally, the necessity of maintaining it shall have passed away, the Gallatin producer will have an inexhaustible market in the development of the contiguous mines of gold, silver, copper and iron.

The Pick and Plover.

The settlement and development of the Gallatin Valley was materially assisted by the establishment at Bozeman City in 1869, of the Montana *Pick and Plover*, a well printed journal, with

point of colonies which are being organized in, Missouri, Illinois and other Western States and the increase of population the present year will undoubtedly be greater than that of the last two preceding years. But there is little danger of the field being soon overcrowded. It is estimated that the main Gallatin Valley will alone support a farming population of fifteen thousand. There is still in Gallatin County, I am assured, over half a million acres of the best of farming lands, subject to entry under the homestead and pre-emption laws.

W. H. M.

The Prospect.

From all parts of the State the most cheering news comes to us of abundant rains, the seeding of larger areas of grain than ever before, and the fine promise it presents of abundant returns, the unequalled bloom of the fruit trees in every locality we have heard from, the springing up of the green feed everywhere, all, everything points to an abundant harvest. And what are the prospects of disposing of our large surplus, should the weather prove propitious to the season of harvesting? It is too early yet to make a safe calculation on the comparative yield of the Atlantic grain crop with last year, but let it be fully equal to the average of years and we find the prospect of good prices encouraging.

From various reliable sources word comes that the wheat crop of Great Britain for 1871 is largely short of an average yield, and estimated at over two millions of bushels; this added to the 64,000,000 bushels of which she annually imports for her home consumption, and it will be seen that the demand for this grain the coming season will be very large for Great Britain alone. France also is short several million bushels, and will look to the United States for a large portion of her deficiency. On the other hand we are exporting every year an increased quantity to Asiatic ports; the aggregate of all demands upon us cannot fail to secure at least a full fair price for this commodity.

To the wool grower, the prospect is even more encouraging. On every hand we hear of a scarcity of wool in all its grades, from the finest to the coarsest; buyers are already ransacking the coast from Lower California to Washington Territory, purchasing all the wool they can get in advance of shearing. Thus the general outlook for the coming year gives a decided tone of cheerfulness to those engaged in the industrial interests of the State.

ASPARAGUS.—We gave full and very complete directions on the culture of asparagus in Vol. I, page 244, to which we refer "Inquirer;" but will state in few words the principle points to be observed in its propagation. Sow the seed now; it is not too early for any of the great valley counties. Sow in well-prepared beds of good garden soil, in drills 15 inches apart, dropping a seed every two inches. Keep the young plants entirely free from weeds for two years; then transplant into permanent, well-prepared beds of very rich soil. Here set the plants in rows 15 inches apart and the same in rows, for hand or garden culture. For field culture in rows two feet apart, to admit of working the ground with a horse.

The richer the ground and the deeper it has been trenched with liberal workings and annual topdressings the larger will be the growth. A bed properly prepared and set, will continue productive 15 or 20 years. Salt as a top dressing late in autumn is an excellent application.

STRAWBERRIES.—The first strawberries of the season have arrived, having been sent by Bloomfield, of Santa Clara, to A. Lusk & Co.

The Hot Springs and Geysers of Montana.

In the February *Journal of Science* appears a description by Prof. T. V. Hayden of the hot springs and geysers of the Yellowstone and Firehole rivers of Montana. That wonderful region, until recently entirely unknown to the outside world, is now attracting wide attention to its natural curiosities, its scenery, its phenomena of artistic, scientific and medical interest.

Almost the whole area of the Yellowstone Basin is covered with volcanic material in some form. The basic rocks on the usual metamorphic granitoid series of the country, with every variety of basalts and basaltic conglomerates. The sedimentary rocks are Carboniferous, Jurassic, Cretaceous and Tertiary. It is doubtful whether any unchanged rocks older than the Carboniferous occur. The Triassic is probably wanting. There is evidence that the sedimentary rocks covered all the country up to the Eocene Tertiary inclusive.

Warm springs are not uncommon in the valley of the Lower Yellowstone, but seldom over 80° in temperature. At Gardiner's river, a branch on the west side, they commence in full force. About 3 miles above the junction the valley bottom is covered with a thick calcareous crust, the deposit of springs now extinct, under which flows a stream of hot water, of 132, 6 feet wide and 2 feet deep. A little distance up is a group of four placid springs, 6 to 10 feet in diameter, whose curative effects were loudly praised by a number of invalids residing there.

A Wonderful Hill.

Near this spring is a high hill on whose slope is a system of terraces, each from 200 to 300 feet high, covered with a thick deposit of lime. The surface of the first two is fast decomposing, and the springs are nearly extinct. Higher up occurs a hot spring deposit, wonderful even in this land of wonders, in the distance appearing like a vast glacier. Indeed the different terraces in beauty can be compared only to a frozen cascade. First comes a broad terrace with old chimneys, irregular openings, like entrances to caverns, which extend beneath the crust, here probably from 20 to 50 feet deep. A little further up are basin-like pools, 4 to 8 feet in diameter and 1 to 4 feet deep, with semi-circular rims most beautifully scalloped; and underneath these rims are rows of stalactites with every variety of surface ornamentation. These continue about fifty yards, gradually ascending, and then occurs an abrupt declivity of about a hundred and fifty feet, rising in steps formed of these exquisitely moulded pools, of every size and variety. Upon the terrace above are numerous active springs with basins 20 to 50 feet in diameter, and with water heated to 150° or 160°, which, however, flowing down the declivity from one beautiful pool to another, gradually loses some of its heat; and we may find a bathing pool of any desired temperature.

Upon this lower terrace springs are continually dying out and others are breaking out anew. There are also several extinct geysers. One has a circular deposit of carbonate of lime, 50 feet high and 25 feet in diameter at the base, looking in the distance somewhat like a conical column. The layers of deposit are arranged on the almost vertical sides of the cone like the straw on a thatched roof, or hay on a stack.

Upon this terrace the principal portion of the active springs is now located; and here is presented another picture to the eye which transcends any description in words. The water is wonderfully transparent; one sees with perfect distinctness through it the minutest ornament on the inner sides of the basin, and the exquisite beauty of the coloring, and the variety of forms baffle any attempt to portray them with pen or pencil. Then, too, around the borders of springs, especially those of rather low temperature, and on the sides and bottoms of the numerous little channels of the streams flowing from these springs, there is a striking variety of the most vivid colors, comparable only to our most brilliant aniline dyes; various shades of red, from the most brilliant scarlet to light purple; yellow, from deep bright sulphur to light cream color; then also various shades of green. All these colors are rendered very vivid by the water. The springs are also full of a kind of vegeta-

tion, composed of diatoms; and in quiet springs and little streams from boiling springs there are great quantities of a fibrous silky substance which vibrates at the slightest movement of the water, and has the appearance of the finest cashmere wool.

About 300 feet further up the mountain are other localities, where the springs, however, are nearly extinct, and the surface covered with the remains of a still nobler natural architecture. A few small springs throw up jets of water two to four feet high. The orifices are lined with a light cream-yellow mixture of lime and sulphur. There are also chimneys, with walls 4 to 10 feet high, some nearly circular at the base, lined inside with a coating of carbonate of lime which is hard, smooth and like porcelain in luster. The oblong mounds, from a few feet to a hundred yards long, 10 to 20 feet high and 15 to 20 feet around the base, generally have a fissure along the summit, in some of which the water can be heard seething and boiling. These fissures all have the same beautiful white porcelain lining, and in some the brilliancy is intensified by the precipitation of vivid yellow sulphur in acicular crystals, but so delicate that they disappear at the touch. A qualitative analysis shows that the spring water contains sulphuretted hydrogen, lime, soda, alumina and a little magnesia. Carbonate of lime predominates, and they may therefore be called calcareous springs.

Classes of Springs—Their Age.

There are two classes of springs in the Yellowstone valley, one in which lime predominates, the other, silica. With the exception of those mentioned and one or two of lesser importance, most of the springs of the Yellowstone and Firehole Basins are siliceous. They may again be divided into intermittent, boiling and spouting, and quiet springs. The first are always above the boiling point when in action, but during the interval the temperature lowers to 150°. The second are always at the boiling point, and some of them throw the water up 2 to 6 feet by regular pulsations. The third class may once have been geysers, but are now quiet, and range from 188° to 90°. When the temperature is below 150° great quantities of iron sesquioxide are deposited by the water.

An interesting question is that in regard to the time required for the deposition of this material. The position of the active springs is continually changing. In the aggregate they have been in constant operation during our present period. The center of activity may have moved and returned to its present position several times. There are no data to estimate at all accurately the period of any one era of deposition. Around the springs now active are dead pines, 6 to 18 inches in diameter, buried 4 to 6 feet in the calcareous deposit. From evidence gathered, one may estimate that at least 6 feet have been deposited within the space of one century.

Another interesting feature is the antiquity and great compactness of some of these deposits. On the mountain summits 1,500 to 2,000 feet above the river, evidently lifted by the forces which elevated the whole range, is a bed of hard, white and yellowish-white, regularly stratified limestone, 50 to 150 feet thick, which once evidently extended over a large portion of the valley. We may ask the question whether the geological structure of this region has anything to do with the calcareous character of this deposit. On the side of Gardiner's river, opposite the hot springs, is a bluff extending 6 miles, composed in the aggregate of 1,500 feet of Upper Cretaceous and Eocene Tertiary Strata, with some irregular intercalated bed of basalt. A thick bed upon the summit rests uncomfortably on the Tertiary beds. This group of strata inclines northeast at a moderate angle, and undoubtedly extended across the river over the area now occupied by the hot springs. Under the hot spring deposit, beds of older date incline in the same direction, the angle increasing as we ascend the mountains. The whole mountain side is covered with basalt of a thick deposit of local detritus, with here and there an outcrop of arenaceous Jurassic limestones. We therefore know that beneath this calcareous deposit there are at least 1,500 feet of Carboniferous limestones. If the origin of the heat which so elevates the temperature of these spring waters is as deep seated as is generally supposed, then the heated waters have ample play for their powers in dissolving the calcareous rocks beneath.

Hot Springs of the Upper Basin.

A few springs occur at the mouth of Tower creek, at the lower end of the Grand

cañon, but the great hot spring district commences beyond the mountain range forming the north wall of the upper basin, 20 miles above the Lake. Here is an area, 40 miles long and 15 wide, which either is or has been occupied by hot springs. The Grand cañon is a channel 1,000 to 1,500 feet deep, carved out of basaltic rocks and hot spring deposits, on the sides of whose walls may be seen the irregular fissures which communicate from the surface with the heated interior. Resting upon an irregular surface of basalt are immense deposits of silica of every shade of red, yellow and white.

On Mt. Washburn is a remarkable group of springs now in constant action. Alum, sulphur, soda and common salt are found upon the surface in considerable quantities. Sulphuretted hydrogen is emitted in such amounts as to fill the air and render it oppressive. This group extends across the Yellowstone to the eastward for several miles. The springs now in action are only a few out of the many hundreds which once covered the entire area.

Sulphur and Mud Springs.

The largest group of these is at Crater Hills, 8 miles below the lake, in a district about half a mile square. Here are several mounds, 50 to 150 feet high, of siliceous deposits from extinct springs. The old craters and immense deposits show that the present active springs represent only the last stages of a once magnificent group. Even those now remaining excite intense astonishment. All around the base and high up on the sides of the hill are vents from which steam constantly issues, and around the edges and inside the orifices a most brilliant yellow layer of sulphur has been precipitated. On the west side, one of these jets produces a sound like that of a locomotive, which can be heard for a long distance. The surface is fairly riddled with little steam vents, and the crust sends forth a hollow sound beneath the tread; and on removing this shelly covering at any point, hot vapors come forth, while its inner surface is encrusted with beautiful sulphur crystals. The springs here are either boiling, mud, or quiet springs. The principal boiling spring is near the base of the hills, and is in a constant state of violent ebullition sending up a column of water 2 to 4 feet. It has a basin about 15 feet in diameter and gives forth a huge column of steam. The rim of this spring is a marvel of beauty. It is composed of silica, but scalloped and covered over with the most delicate bead-work, and upon the pure white silica is deposited a thin layer of sulphur of the most delicate cream color.

Perhaps the most interesting objects here are the mud springs, which are of every size from 1 inch to 20 feet in diameter. One of the largest is filled with fine light-brown mud which is in constant agitation, its surface covered all over with puffs like hasty pudding. Others send forth a thud-like noise every second, with an impulse at longer intervals which throws the mud up several feet. The water and mud in the vicinity are thoroughly impregnated with alum.

Two miles above is another group of boiling, turbid, placid, or mud springs and geysers. Upon the side of the hill bordering the river is a most terrific mud cauldron. A large column of steam is constantly ascending, 500 feet or more, from a deep funnel-shaped basin, 25 feet in diameter; when the wind carries away the steam for a moment, the thin black mud may be seen boiling violently about 20 feet below the rim, with a noise like distant thunder. The ground and trees for 200 feet around were covered with the mud which had been ejected at some of its periodical outbursts.

A NEW INVENTION.—We are beginning to imitate and perhaps equal the Japanese, in the manufacture of useful domestic utensils from paper. An exchange says:—In Pearl street, New York, there is a mill which makes from paper, milk pans, cups, bread pans, wash bowls, etc., which is said to be superior to wood or metal. The paper after being pulped is pressed to shape, dried, enameled, and subjected to a heat that would destroy some utensils of the kind. The material is light and easily handled, and does not rust, shrink or easily break.

FLOUR.—It is a significant fact derived from the recent annual report of the Chicago Board of Trade, that there is less flour manufactured in that city than in San Francisco.

INDIAN RELICS have been found in removing the shell mound at Tamalpais park, for the purpose of preparing a foundation for a new hotel.

An Apocryphal Comet.

A report has obtained circulation, probably without foundation, that a Geneva Professor has discovered an immense comet, which from its direction must collide with the earth on the 12th of August next. It is also stated that many weak minded people, both in this country and Europe, are very much alarmed at the announcement. So far from such an event being unwelcome to scientific men, nothing could be more acceptable to them than to have a large comet approach near enough to the earth to switch its tail in the face of mankind, for no such body (save Encke's, a very small and distant one) has made its appearance in the heavens since the great value of the spectroscopic in the determination of the constitution of such wandering bodies, was fully understood. The next comet which does approach very near the earth will be closely scanned, and will enable science to determine, with great precision, in regard to its physical characteristics.

As to any harm being apprehended from any such source, there is little need for fear. It has been quite fully determined that the most of them at least are comparatively harmless bodies—nothing in fact but huge "gas-bags" scarcely more tangible than the streak of light sent out into space by a lantern on a dark, foggy evening. There is little doubt but that the earth has passed through the tails of at least two comets within the last forty years, without knowing it at the time—the phenomena attending the passage having, in both cases, been attributed, at the time of the passage to some peculiar atmospheric phenomena. The first one, about 1837, is well remembered by the writer. The atmosphere over nearly, or all this continent was aglow with a red lurid light, which caused alarms of fire in various parts of the country—the atmosphere having the appearance given by the reflection of a fire at a great distance on a slightly foggy night. The continuance of the phenomena was observed for several hours.

Invention of Suspension Bridges by the Chinese, 1,900 Years Ago.

The most remarkable evidence of the mechanical science and skill of the Chinese at this early period, is to be found in their suspended bridges, the invention of which is assigned to the Han dynasty. According to the concurrent testimony of all their historical and geographical writers, Sanglang, the commander of the army under Kaou-tsoo, the first of the Hans, undertook and completed the formation of roads through the mountainous province of Shense, to the west of the capital. Hitherto its lofty hills and deep valleys had rendered a communication difficult and circuitous. With a body of 100,000 laborers he cut passages over the mountains, throwing the removal soil into valleys, and where this was not sufficient to raise the road to the required height, he constructed bridges, which rested on pillars or abutments. In another place he conceived and accomplished the daring project of suspending a bridge from one mountain to another across a deep chasm. These bridges, which are called by the Chinese writers, very appropriately, flying bridges, and represented to be numerous at the present day, are sometimes so high that they cannot be traversed without alarm. One still existing in Shense, stretches 400 feet from mountain to mountain, over a chasm 500 feet. Most of these flying bridges are so wide that four horsemen can ride on them abreast, and balustrades are placed on each side to protect travelers. It is by no means improbable (as M. Pauthier suggests) that, as the missionaries to China made known the fact more than a century and a half ago, that the Chinese had suspended bridges, and that many of them were made of iron, the hint may have been taken from thence for similar constructions by European engineers.

SEWING MACHINE.—Probably no one invention has come into so general use as the sewing machine. The business of manufacturing and selling them has grown up mainly within the past fifteen years, but during the last ten years has increased rapidly. There are now made and sold annually in the United States about 750,000 sewing machines, and in every city, town, village and hamlet the useful machines are more or less in use. Some of the largest manufactories are now running extra hours to keep up with orders, and even then are frequently unable to supply the demand.—*Am. Manufacturer.*

MECHANICAL PROGRESS.

UTILIZING THE RIVERS OF FRANCE.—London *Engineering* gives an account of a grand scheme for utilizing the French rivers, proposed to the French government several times by T. de Gamond, and now brought up again. It is proposed to suppress the natural profile of the large water-courses which are imperfect, and to substitute for them a series of regular planes in successive slopes, or, in other words, to change the inclined planes of rivers into hydraulic staircases. By means of dams, reservoirs, etc., the amount of water in the river channels would be regulated, and therefore the irrigation of land, motive power, navigation, etc. Floods, washing away of land, filling up of river beds, etc., would be avoided. By means of dams the level of the outfall of oceanic rivers is to be raised, sensibly, say two feet.

A table, prepared by M. de Gamond, gives the total mean volume of daily discharge of the rivers into the sea as 6,348,958 millions of cubic feet. This would irrigate 45,000,000 acres, at the rate of 140,000 cubic feet to the acre; or would furnish by its fall 12,000,000 horse power. In addition to the benefits (mentioned above) to accrue from the scheme, industrial establishments could spread themselves over the whole face of the country under the most favorable circumstances, the use of steam would be reduced to very narrow limits, and the exhaustion of the coal supplies would become a very remote question. The access to the great sea-ports would be improved for ships of heavy tonnage, and the great river harbors would be opened for navigation by transforming the sea-channels into vast lakes of fresh water, independent of the sea. The ebb and flow of the tide would be suppressed. Internal navigation would be greatly improved, and great lines of water communication could also be completed. Fish culture could be introduced on a grand scale, etc. Finally the enterprise would be exceedingly profitable to the parties undertaking it. Notwithstanding the brilliancy of the scheme the project will hardly be carried out just at present.

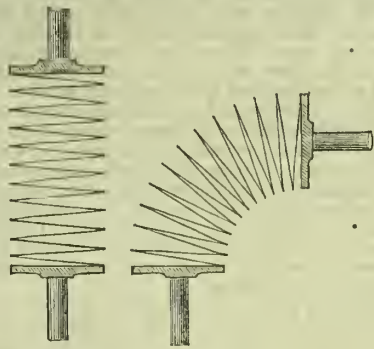
IMPROVED AXLE-BOXES.—*Engineer* of Feb. 9th calls attention to an improved axle-box, designed for railroad cars, which promises to effect an important saving in the working expenses of railroads, and a greater immunity from danger from a certain class of accidents. Lubrication at the sides is one of the principles involved, and capillary attraction the condition under which the oil is applied to the journal is another. Springs are also introduced to keep the pads in position. One of these boxes was lately exhibited, according to *Engineer*, which had run 19,000 miles with the consumption of only half a pint of oil. It is also claimed that a box filled with oil in the repair shop, will not again need refilling until in ordinary wear it is time for it to go again into the repair shop for general overhauling. Moreover, the oil in the box cannot be readily tampered with. They are known as the Boucher axle-boxes, and have already been introduced upon 26 railroads on the continent of Europe, aside from their very general introduction into use in England.

EFFECTIVE WORK OF STEAM ENGINES.—The *Deutsche Ind. Ztg.* lately contained an article on indicators and Brake Dynamometers and on the method of ascertaining the amount of useful or effective work of steam engines. This can generally be found by three methods:—By calculation; by means of a brake dynamometer; or by the indicator-diagram which gives the indicator horse-power from which the actual or effective brake power can be derived. The third method is the simplest. From a large number of experiments upon engines of different dimensions, it would appear that no smaller ratio than 0.70 between brake and indicator is impossible, and that not more than 0.90 is attainable.

ARTESIAN WELL AT BOSTON.—A well was commenced last March and work has since been steadily going on at a rate of 1 to 15 feet daily. It is now down 1,000 feet and has cost \$15,000. The diameter of the bore is 5 inches; the drill is 4 inches across; the drill and iron shafting which connects it weighs now 1,200 lbs., and the rope 900 lbs. A 16-horse-power engine is employed, with a walking beam of 36-inch stroke making 30 strokes per minute.—*Am. Railway Times.*

New Mode of Transmitting Rotary Motion at Angles.

This ingenious invention is shown in the engraving. It is a spiral formed of a plane iron, or rather steel, band which is attached at its opposite ends to the two shafts to be connected. The diameter will necessarily, in order to secure sufficient strength, be considerably larger than that of the shaft; and the attachment may be made by means of a cast iron cap, having on one side a socket for the shaft and on the other a flat surface to receive the spiral. The breadth of the iron band or ribbon which forms the spiral is about an inch and a half, and its thickness a little more than a quarter of an inch. The total diameter of the spiral is about one foot. For a joint of transmission forming a right angle, about fifteen turns of the spiral will suffice. The entire spiral may be



made of a single ribbon, or it may be made up, as it has been in some cases, of a number of parts connected together by tongue and groove.

Experience has proved that this mode of transmission performs perfectly, without being liable to get out of order or to give way. Its strength is very considerable, but cannot be indefinitely increased, since a thickness exceeding that which is adopted would bring too great a cross strain on the metal. A number of these joints have been in operation without accident for several years. It is the invention of Mr. Thirion, of Belgium.—*Scientific American.*

DIAMOND-TOOTHED SAW.—A diamond-toothed saw for stone quarries has been invented in Vermont, and after three years experimenting, is said to have been perfected so far as to work very satisfactorily. The *Boston Advertiser* says of one of the machines on exhibition in Boston: The main features consist of a straight saw armed with diamond points moving back and forth through the stone, with drills working vertically to free the ends of the kerf. The diamonds employed are of the black variety, on a half-inch width, and with a six-horse-power engine can be sunk in the solid quarry from six to twenty-four inches per hour, according to the hardness of the material operated upon. The instrument is very compact, and one of the power displayed can be operated by two men, whose services, together with the fuel consumed, will amount to less than ten dollars a day, effecting an estimated saving of the labor of fifty men, and reducing the cost of solid building material one-half.

IMPROVED IRON RAILS.—The demand for steel rails is so great that steel-rail makers are said to be nearly all full with orders for two years to come. At this juncture an English firm has patented a new rail pile which is said to give an improved iron rail, and which is favorably noticed by the *Engineer*. The usual rail pile is built upon the slab of crystalline iron which forms the head of the rail and must be placed in the heating furnace in the same position, viz., the slab on the bottom or coolest part of the furnace and the fibrous iron uppermost and exposed to the most intense heat. The result is in many cases that the fibre of the flange is destroyed while the head is imperfectly welded, and there is produced a brittle rail with a laminated head. In the patent the fibrous iron is below, the crystalline above, giving superior rails.

ASPHALT ROADS IN PARIS.—It is stated that the authorities of Paris are about to give up the asphalt paving and return to the old-fashioned stones, in consequence of the great expense of keeping up the former.

GLYCERINE FOR PAPER.—Small quantities of glycerine are sometimes added to paper stock to give the paper flexibility, but especially to give copying paper the quality of taking up color readily.

SCIENTIFIC PROGRESS.

NEW METHOD OF NICKEL PLATING.—A simple and cheap method of nickel plating, which is open to the use of all, has been invented by Prof. F. Stolba. The process is, in brief, as follows: Into a vessel of porcelain or metal, preferably copper, is poured a concentrated solution of chloride of zinc, made by dissolving commercial zinc in common hydrochloric acid. From once to twice the volume of water is added, the solution heated to boiling and hydrochloric acid added drop by drop until the precipitate (formed on diluting the chloride of zinc with water) is redissolved. As much zinc powder as will cover the point of a knife is now added, whereby the metal of the vessel becomes zinc plated. Enough nickel salt (the chloride or sulphate or the double sulphate of nickel and potassium) is introduced to color the liquid distinctly green, after which the articles to be plated, with surfaces perfectly free from fat and rust, and with them some small cuttings of zinc, are put in and the liquid again boiled. The work is finished in about 15 minutes. If any part of the articles is not plated, the boiling is continued, fresh pieces of zinc and, if necessary, fresh nickel salt being added. It is important, if the coating of nickel is to be brilliant, the liquid on boiling shall not be cloudy from basic zinc salt, or acid from free hydrochloric acid. The plated articles are well washed with water and cleaned with polishing chalk. The same liquid may be used repeatedly for plating. The nickel salt need not be chemically pure, but must contain no metals precipitated by zinc.

PHOSPHORESCENCE OF ANIMALS.—Prof. Panzeri, of Naples, who has been studying the phosphorescence of marine animals, finds that in all cases examined this is due to matter cast off by the animals—it is a property of dead, separated matter, not of living tissue. In all cases (except *Noctiluca*) this matter is secreted by glands, possibly special for this purpose, but probably the phosphorescence is a secondary property of this secretion. Further, this secretion contains epithelial cells in a state of fatty degeneration, and it is these cells and the fat therefrom which give rise to the phosphorescence. This brings the phosphorescence of marine animals and that of decaying bones, etc., under the same category. In one species, this property was made the means of studying the rate of transmission of an irritation. For when one extremity of a *Pennatula* is irritated, a stream of light runs along the whole length of the polyp-colony, indicating the rate at which irritation is transmitted. This rate can be accurately measured. In these studies the spectroscopic was used.—*Nature.*

PRIMORDIAL FAUNA IN NEVADA.—An interesting discovery has been made, carrying the primordial fauna much further west than ever before found. The most western locality of potdam sandstone fossils previously described is in the Big Horn Mts., at the head of Powder river, in long. 107°; but Mr. J. E. Clayton has discovered fossils of the same period near the 116th meridian. These he sent to Prof. Whitney, of the California Geological Survey, who has an article thereon in the February *American Journal of Science*. The fossils occurring in limestone, belong to the characteristic potdam families of the *Lingulidae* and the *Paradoxidae*. The specimens contain many individuals but few species. *Agraulos Oerrii* is the most abundant species, with fragments of (apparently) *Concorophle* and the genera *Lingulepis* and *Obolella*. Other specimens found by Mr. Clayton on Shell Creek, is mottled buff and gray limestone; also demonstrate the existence of primordial fauna, but the fragments are very imperfect.

MASSSES OF METEORIC IRON. the largest said to weigh 25 tons, were found last year in Greenland, lying loose on the shore, but immediately resting upon basaltic rocks (probably miocene) in which they appear to have been imbedded originally. They contain nearly 5 per cent. of nickel, with 1 to 2 per cent. of carbon and are chemically identical with many acrolites of known meteoric origin. Notwithstanding the place they were found, on removal they speedily fell into powder, possibly from the absorbence of chlorine and the formation of ferreous chloride.—*Chemical News.*

MASTODON IN MASSACHUSETTS.—The first mastodon remains ever found in Massachusetts consist of a tooth, discovered last fall in Colerain, a northern border town.

FORTIETH PARALLEL SURVEY REPORT.—The Report on Botany, by S. Watson, aided by Prof. D. C. Eaton, has appeared. It is illustrated by a map and 40 plates and is excellent in its matter and appearance. A general Report forms an introduction to the Catalogue which makes up the principal bulk of the volume. This "Catalogue" is not a mere list of names, but a systematic account of the plants collected. The geographical and meteorological notes and those on the general character of the vegetation are well written and most interesting.

AGRICULTURAL RESOURCES OF THE GREAT BASIN.—A few pages at the close (we use the remarks of the *American Journal of Science*) are devoted to the consideration of the agricultural resources of the basin, the limit to which is fixed by the deficiency of water. The most fertile localities lie at the base of the Sierras; but, as a rule, there is an apparent absence everywhere of a true soil or mould resulting from the decomposition of vegetable matter. A moderate amount of alkali in the soil appears not to be detrimental to culture. The soil which produces sage brush seems to be always cultivable when it can be irrigated. With the present supply of water, most economically used, it is thought that only 1,000 out of 34,000 sq. miles of Northern Nevada could be cultivated; of the southerly portion and of western Utah, much less. Eastern Utah, with more water from the Wasatch and Uintah, Mts. is much more favorably situated. The absence of graminivorous animals, except rabbits in the valleys and a few mountain sheep and antelopes in the higher ranges, shows that the country is ill adapted for grazing. *Eurotia lanata* and a few other chenopodiaceous plants are eaten by sheep as a substitute for grass. The question is raised whether the existing plants, or some substitute, may not be turned to profitable account, and whether some forms of orchard, vineyard, or tree culture may be made to thrive here. The present plants on the whole are not lacking in expansion of foliage or succulence, from 55 to 80 per cent. of foliage—and evaporate daily an amount equal to three-eighths of the weight of their available material. This loss is made good, not from the atmosphere, but from the soil, dry as it is; yet water is rarely to be had under a depth of 100 to 300 feet, often not even at that depth. The porous soil must allow of the free upward diffusion of moisture, also of deep penetration of roots.

DIAMONDS IN XANTHOPHYLLITE.—P. Von Jeremejew has found minute diamonds irregularly distributed through the plates of the Xanthophyllite of the Schischimskian Mts., near Slatoust. The green plates of this mineral nearest the rounded masses of talcose slate and serpentine enclose very large numbers of the crystals which are generally colorless and transparent, sometimes with a pale brown tint; the diamonds are also found in the two rocks mentioned.

REMARKABLE FOSSIL BIRD.—One of the treasures secured last year by Prof. Marsh's expedition was the greater part of the skeleton of a large fossil bird, at least 5 feet high, found in the Upper Cretaceous of western Kansas. Although a true bird, it differs widely from any known recent or extinct form, and affords a fine example of a comprehensive type. The proposed name is *Hesperornis regalis*.

MICROSCOPIC FORMS IN THE ATMOSPHERE. According to a late communication by Ehrenberg to the Academy of Sciences at Berlin, he has succeeded in determining the existence of 548 species of organic forms, absolutely invisible to the naked eye, and yet held in suspension in the atmosphere.

PHOSPHORESCENCE OF EGGS OF THE GLOW-WORM.—M. Jossuet has noticed that the eggs of the common glow-worm are phosphorescent after laying and remain so, at least for a considerable time. If one of the eggs is crushed in the dark the liquid therefrom is luminous until quite dry.

PLANTS OF OREGON.—Mr. E. Hall last year made extensive collections of dried plants in Oregon, which are distributed in sets and sold at \$8 per hundred. Full sets contain 500 to 600 species and may be obtained of Mr. C. Wright, Harvard University Herbarium, Cambridge, Mass.

DEEP SEA LIFE.—The sea has living microscopic creatures three miles below the surface. How can they live with such a heavy pressure of water upon them?

HOME AND FARM.

Farm House Chat.

BY MARY MOUNTAIN.

[Written for the Press.]

My uncle Toby's chair legs "came down on the run" and he stamped his foot twice with a pathetic earnestness that quite touched my heart; but giving no sign I quietly braced myself and prepared for the worst.

"O, laugh!"—cried he in a tone that indicated the tumult of a soul that must find relief or perish in the attempt—"I am just disgusted with our California farming! It's enough to make a man sweat to read the Eastern papers. Look at dairying here and there. Frozen up five months in the year, they still make their cows average from 200 to 250 lbs. of butter per head, while ours will hardly average 125. Fine, fat cattle they have over that way—good blood, good care, everything tells in the grand result. And their horses, pigs, farm-buildings, everything in tip-top condition; no wonder they 'feel good' and can write a good piece for the papers. No wonder they can put their butter straight into our market and blow into smithereens our fond delusions about a very sudden fortune from dairying."

Yes, yes, we brag about our fine climate and it plays the very mischief with us. Climate, like charity, is made to cover a multitude of sins. Don't we all know what the cold, rainy winter will do to our stock? Don't we know that every creature should be sheltered and generously fed, from the first rains until new grass is far enough along to do better for them than barley keep the breath of life in their frames of skin and bone? Don't we all know what a long time it takes to bring them up from that reduced condition, and that while the cattle suffer, our purses suffer too?

Could I be proud to take a thorough-going Eastern farmer on a prospecting tour among ranches hereabout, or anywhere in California? Doubtless the cows, calves and other stock that have died from cruel neglect this winter would be buried or hauled away out of sight; but the condition of those who have managed to pull through, would amply 'show us up' as barbarous christians and renegade farmers! Yes, sir, I repeat it—barbarous christians and renegade farmers—that's what we are."

In moments of exaltation and when his "back is up" my uncle Toby gives me this title of "sir." Not that I present a bold and manly front to his knock-down arguments, but because their is aid and comfort in the word itself—as all American orators from the debating student to the leading Senator will acknowledge. Hoping to solace him with a brighter side I suggested—"Perhaps we shall soon see a change for the better in the care of domestic animals. Surely the Farmers' Clubs with many earnest, intelligent members—the agricultural books and papers giving line upon line, precept upon precept, here a little and there a great deal of practical wisdom and good sense—why, the very force of example, a few good examples will finally make a wonderful change in all this."

"No, sir! you are simply mistaken. A good example or a bad example has no effect whatever upon your average Californian. He came here expecting 'something to turn up' and make him a rich man."

That slow process of bone, muscle and brain working, year in and year out, for a comfortable home and something laid up for old age—ah, that did very well for his father and grandfather, but he is on the alert for 'chances'; he belongs to the genus 'Micawber'; and when Dickens sketched that great prototype, he 'took' us all, quite as well as though we had gone in to sit for the picture.

Again, farmers generally have no need of examples; they are no fools—they know already that this happy-go-lucky management is all wrong and 'don't pay'—but they are not willing to take the trouble of doing things right. Yet it is a little too exasperating to hear them growl about 'hard times and bad luck.' Men who will starve their cattle year after year when it might be easily avoided, deserve all that comes of that and their other slipshod arrangements.

I could show you a string of farmers along one road for several miles, every man of them anxious to sell;—good farms

they are as any man need wish for, and the owners going behind all the time.

How is that? O, bless us and save us! We are the people with open hands! Free, lavish, liberal, royal! Half dollars jingle loosely in our pockets and roll out more easily than copper cents ever did from the tight little purses of our grandfathers. I see farmers spending in town week after week such sums as if saved would soon make them independent. But we despise small economies; and laying up by little and dribblets—pshaw! there is no such old-fashioned nonsense about us!

We can endure a heavy mortgage because it sounds rather business-like, and then "land is going to rise"—O, of course! and we will sell out anyhow and go somewhere else.

Hope, and courage, and faith in the future are good things to have and much needed by a restless people; but for the making of a good farmer give me grip and grit. He must hold on somewhere, long enough to show what he can do; and to do much that is worth showing requires, in this pursuit, an ordinary lifetime.

At this point my uncle Toby again tilted his chair and with shut eyes buzzed inwardly.

Picking up an eastern paper I read the following extract from our San Francisco *Alta*:—"The Hon. M. P. Wilder, President of the American Pomological Society, during his late visit in Cal. was astonished to observe that nearly every beautiful private garden he was invited to examine was 'for sale.' Grounds that have taxed ingenuity and taste as well as the purse—that represent years of arduous toil to cultivate, ornament and bring to their present perfection of beauty, usefulness and high value, are offered for sale! He could not comprehend it. He saw residences in and about Oakland that the gods might covet, inhabited apparently by the rich and refined, adorned with the most rare and magnificent plants the world produces, and—for sale! Beds and bordered walks of the sweetest flowers, after years of nursing into perfection, to be sold! to be exchanged for filthy lucre!"

And here comes in our grave and venerable *Alta* with graceful pen to smooth over this little matter. He first reproaches our Hon. visitor with confining his scrutiny to the beauties of nature and overlooking those finer instincts of humanity and "that natural and undying love of home" that springs eternal in the Californian bosom. (Not love of these homes, but of the old homes "away down East.")

Then he goes on to explain that all this restlessness and readiness to "sell out" is only the beautiful and filial desire to return to the old homes, "not like the prodigal in penury and want, but like the conqueror to receive the ovations of his people!"

"Putty good!" quoth my uncle Toby. "But we can't all go 'like conquerors' even if we sell out and invest the last dime in those 'ovations' which, from a strictly financial point, might seem rather wild-catty and intangible. Why not own up at once that we are the most restless people under the sun—not 'from undying love of home' but from undying love of change; from undying dissatisfaction with any present condition that does not briskly rattle with dollars. We can do a great many things but we cannot wait. Our eagerness, our morbid greed for sudden wealth, oversteps everything; we will not be bound by the old ways; we 'go' for this, that and the other, hoping with one swift grasp to secure the coveted prize. But if large numbers of our wealthy and refined are 'going for good and all' we might as well stop bragging that old Californians are never contented outside of their adopted State. Take us as a whole and we're a queer lot. We followed the Star of Empire to the jumping off place and now a very bad attack of fidgets may start some upon the back track; for whatever comes of it they must 'git up and git.' Slang is solemn stuff, bubbles to the surface and shows what quality of heaven leaveneth the whole lump."

We should all have our flowers of time, bright spots in our life to-day, and, if possible, brightest moments in expectation for to-morrow. We must toil, and toil incessantly. The fact cannot be shirked, avoided or passed by; it stands sentinel at our very bedside, and speaks to us in the land of dreams. But our toils, tapestried with merry minutes, sweet smiles, cheerful music, eventful episodes, fair flowers and frolicsome faces, if we add these enjoyable trifles—and we can if we will—no passing moments will fail to be pleasanter for them, and also for the playful little times gone by, and the anticipation of the untroubled hours to come.

Sacramento Farmers' Club.

This club met, pursuant to adjournment, in the office of the Secretary of the State Agricultural Society, Vice President Manlove in the chair. After reading the minutes of the last meeting, thirty minutes were devoted to a review of the subject of

Alkali Soils.

J. R. Johnson said—I think it evident that drainage alone cannot always be made effectual in the reclamation of alkali soils; at least other expedients may be resorted to in connection with drainage with good results. Stable manure, well mixed with the soil, and turning the soil up with the plow and allowing it to remain loose, exposed to the action of the sun and atmosphere will help much. Alkali soils generally are very rich with the elements of production, but these elements are so mixed with other ingredients that plants cannot separate and use them. Anything that will neutralize or counteract these vicious ingredients will reclaim the soil and render it valuable. Manures of various kinds are found to do this, particularly coarse manures, as straw. The great difficulty with alkali soils is that they pack too close together, so as to exclude the air and heat. Mixing with coarse manures opens the pores, so to speak, and enables the soil to breathe, and thus change its nature.

Hoyt—I think the base of alkali soils is salt; and anything that will extract the salt will reclaim the land and make it productive. I agree with Johnson, that the alkali soils have a superabundance of elements of production, but not in proper proportion; restore the proportion and these lands are very valuable. Indeed, much of our alkali soil would make good manure for a large portion of the light soils of the Atlantic States.

Aiken—I repeat, the great and effective agent at our command at the least expense for the reclamation of alkali soils is drainage. Carry off the surplus water, and with it you will carry off the surplus alkali and render the soil porous and lively and productive.

Judge Baker said that he was not aware until to-day that he had been appointed to prepare an essay on subsoiling, as he was absent when appointed, but if the club would let him off to-day he would try and be prepared at the next meeting.

T. Murphy then read an essay on this subject, taking the ground that on the red lands merely stirring or loosening up the under soil, without bringing up so as to expose it to the sun and air, would do but little good. That it is better to plow deeper at each successive plowing, thus gradually bringing the subsoil up and mixing it with the surface soil and thereby improving the whole.

Wendall—When I went on to my place there had been a number of ditches dug from two to two and a half feet deep through the place, and I filled these up level and sowed the fields to grain. Where these ditches had been there were strips of grain much stouter and heavier than the rest, showing that Murphy's position is correct—that the subsoil should be brought up and mixed with the surface. The great secret of good crops is thorough cultivation when the soil is in the proper condition. It ruins soil to cultivate it when too wet. It will require years for land to recover from the effects of one wet plowing.

Rutter—In breaking up new soil I would not plow deep. The fertilizing elements are on the surface of new soil; go down deeper gradually, and thus keep up the fertility by mixing the soils.

Aiken—Soil tilled and pulverized deep, whether the subsoil is brought to the surface or not, will retain moisture in a dry time much better. This I have proved by frequent and satisfactory experiments. The subsoil should be brought up to the surface gradually—say turn it up one inch deeper at each successive plowing or each year. But if you would have it retain the moisture in time of drouth, stir it deep with some kind of a subsoiling instrument. I use what is called Perry's Scarifier; this stirs the soil as deep as you put it down but does not turn it up.

Murphy—You all seem to support my proposition—that deep plowing with a common plow is the best mode of subsoiling. You have different ways of accomplishing that end, but I believe the cheapest and best is to use the common plow. In summer following I would not turn the furrow over, but set it up edge-wise and let it stand as much exposed to the weather as possible, and not summer fallow until the ground is covered with a good growth of vegetation. This makes good manure.

The Secretary read a letter from Dr. E. S. Holden of Stockton, saying that the farmers about that city had agreed to organize a farmers' club, and asking a copy of constitution and by-laws. He also read a letter from W. J. Frierson of Knight's Landing, saying he sent the club for distribution among its members a small sack of sunac seed, which he had received from Iowa. The thanks of the club were voted to Frierson, and the seed distributed.

The subject of the cultivation of small fruits was selected for the next meeting, and the club adjourned to meet in two weeks at the same place.

"Don't shiver over last year's snow," a saying of Archbishop Whately's, is peculiarly applicable to those who made themselves miserable over troubles that are past.

California Wines in Europe.

Julius Dressel of the Rhine Farm, Sonoma County, writes I. N. Hoag, Secretary of the Vine Growers' and Wine and Brandy Manufacturers' Association, under date of March 5th, as follows:

Last fall I sent a box with samples of Mission and foreign wines, out of the vineyards of J. Gndlach and my own, to a brother on the Rhine. He convoked two meetings to test our California wines—the one at Geisenheim, on the foot of the famous Johannisberg, the other at Weisbaden—both largely attended by men with the most cultivated wine tastes and tongues and of the highest standing as wine judges. They treated the matter deliberately, compared each sample with counter samples of their own, drafted protocols, and put down the opinion of the meeting about every single number. Here is what my brother writes me as the sense of these meetings:

"Your Reisling of 1866 takes the first rank (there was a bravo for it). The bouquet is unexceptionable; besides there are strength and richness in it. Next comes Traminer of the same year, which is beautifully ripe and very fit for use. The Gutedel of 1867 (golden Chasselas) resembles most our Rhenish qualities; and the Kleinberger is agreeable light and smooth. Of the Mission of 1865, '67 '68 and '70, the 1870 pleased best. These wines of the Mission grape are pure of taste, ripe and unctuous; therefore, with their sweetness and high percentage of genuine alcohol, they may prove splendid cut-wines for our poor sour growths of the last three crops. A lively interest was shown for the red Mission of 1869. They found it full, strong, of a marked Burgundy flavor, and approaching the taste of the celebrated Asmannshausen.

They thought a superior Port could be made out of it, as its bouquet surpassed the Portuguese.

The champagne of the Buena Vista Vini-cultural Society was also duly appreciated, it sparkled first rate, was not too dry, hitting the right degree of sweetness. Generally there prevailed only one voice among the judges, that these wines far surpassed all expectations; and I remarked considerable progress since I tasted them on previous occasions. On an average, the taste is pure, agreeable; and they could compete with our Rhine wines of distinguished years, up to the middle qualities. They also show a very appropriate cellar treatment. All honor to your California wines.

As my brother is a recognized authority, having been selected official judge of the wine departments of the World's Exhibition at London and Paris, and as he took only the most competent jurors, who were in earnest about the truth, I think their verdict on California wines might prove of interest.

San Joaquin County Farmers' Club.

A meeting was held at the office of M. Walthall in Stockton, on Saturday, March 2d, 1872, for the purpose of organizing a Farmers' Club. The Club was organized by the election of E. S. Holden as President, and M. Walthall, Secretary.

The following named gentlemen were elected members of the Club: Joseph F. Harrison, J. K. Doak, N. S. Harrold, John Wilson, C. G. Earnest, W. G. Phelps, C. Grattan, John L. Beecher, W. H. Lyons, J. R. W. Hitchcock, A. Burkett, E. S. Holden, George West, H. B. Underhill, C. G. Hubner, H. E. Wright, James Smythe, M. Walthall, Israel Lander, John Wasley.

It was resolved that the meetings should be held every Saturday, at 10 o'clock a. m., at the office of the Secretary, until such time as the Club can secure the use of a suitable room for the meetings.

Committees were appointed to make arrangements for a room, and to prepare a Constitution and By-laws for the Government of the Club.

The questions of organization and future policy were discussed by Messrs. Lyons, Smythe, Beecher, Holden and others. After discussion, the propriety of making the subject public a week in advance was agreed to, and so ordered.

Thus one after another of the agricultural counties are organizing their Farmers' Club, for the discussion of the more important interests connected with the development of the industrial pursuits and general welfare of their respective counties. We hope soon to hear of Contra Costa or Oakland; San Francisco and neighboring counties, moving in the same direction.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Gazette, March 14: **EARLY VEGETABLES.** New potatoes of good size and excellent quality made their appearance in San Leandro on Tuesday. They were raised at Mission San José. Green peas have been quite plenty since the first of February. We saw the first pie-plant of the season about three weeks ago. At the present time there is scarcely any variety of vegetables but can be had new and fresh in our market. Santa Barbara people regaled themselves on strawberries nearly a month ago.

BAD ROADS.—In consequence of the great amount of wet weather during the past five or six weeks, the roads are generally in a condition not wholly impassible, but in many places nearly so.

AMADOR COUNTY.

Ledger, March 14: The keeping of cows is a concomitant of agriculture; hence the following is an agricultural note.—Ed.

A FEMALE HUNTER.—We are informed of a family living at Mace's saw mill, about twelve miles above Volcano, by the name of Hoss, and the female branch of which created a very enviable reputation as a huntress. A few days since she took her rifle, started out in search of her cows, and after shooting several hares and wild pigeons was on her return, when she espied a very large buck, and nothing daunted at the sight, raised the trusty rifle, pulled the trigger and down came the king of the forest. She cut the animal's throat and severed his hind quarters, placed them on her gun as a Chinaman does his baskets on the bamboo and made her way home. On her arrival at the house she met her husband and the two returned for the remainder of the deer. After getting it home they concluded to weigh it, and found that it went over two hundred and twenty pounds. Now if some of our city ladies could accomplish such a feat they would be the envy of their bon ton society. Mrs. Wm. Hoss has the belt, so far as we know, of the female hunters of the Pacific.

BUTTE.

Enterprise, March 14: **SUPERIOR RAISINS.**—We were favored this week, by Mr. P. M. Kelly, with a box of most delicious raisins. They were cured by Mr. Kelly on his ranch on Butte Creek, above Centerville, from the white muscat of Alexandragrapes. They are large, sweet and well preserved, and certainly equal, if not superior to any imported raisins we have ever seen. They are a sample of six or eight hundred pounds shipped this week by Mr. Kelly, through Dr. Brotherton of Centerville, to a house in San Francisco. The Butte Creek hills are proving to be the very best soil in our State for the cultivation of grapes, and we learn that Mr. Kelly is preparing to put up several thousand boxes the coming season. There are indications we are pleased to know, that this, the first shipment of raisins, we believe, from Butte county, is but the commencement of a large and prosperous industry.

Record, March 16: **WOOL.**—This is an important interest in Butte county, and the price for the forthcoming clip promises to rule high. We understand that wool is sought to be engaged now at 45 cents. This is a considerable advance from prices of last year, the highest figures then attained was, we believe, 34 cent. We congratulate our wool-growers on the prospect before them. It will however, require a considerable portion of the advance to place them even on the losses they have sustained in consequence of the very severe winter through which their flocks have passed. In consequence of this it is probable the clip will be comparatively a light one. This advance in wool, and an average crop of grain, ought to render financial matters easy and comfortable in Butte the coming summer and fall.

"The time of the singing birds has come and the voice of the turtle" ought to be heard, but has been silenced, during the past week, by a cold, north wind that chills the songsters, interrupting their music and foolish coquetries; nips precocious loveliness in the bud, and tosses the musical laugh of the garrulous brook into a chilling spray. It is the last expiring effort of the hoary-headed winter to linger in the lap of spring. The old scamp!

CONTRA COSTA.

News, March 16: **PLOWING.**—The fields between this city and San Leandro are being plowed, an agricultural process which some of our friends a few weeks ago pre-

dicted could not be accomplished for a month at least after the rains.

FRESNO.

Expositor, March 13: **RIPE TOMATOES.**—We have frequently alluded to the mildness of our winter weather, and expatiated upon the peculiar advantages this section offered to settlers. A few days since we were shown a ripe tomato plucked from a vine of last year's growth, in the garden of Mr. Chas. A. Hart, of Fort Miller, a short distance from this town. The vine has been growing in the open air throughout the winter, as are also several others in the same patch, and have not at any time been protected from the weather. The vines are now green and thrifty, and in full bloom, and have a number of tomatoes upon them, in all stages of growth from the flower to the ripe one alluded to. The winter has been about as cold as any that ever prevailed in this section. If plants as easily killed by frost as the tomato, will flourish throughout the winter, why will not other tropical fruits and plants grow well and thriftily.

LOS ANGELES.

The Santa Anita ranch, eight thousand acres, one of the finest in southern California, was recently sold for \$85,000. The purchasers, H. Newmark & Co., will set apart two thousand acres for the special cultivation of the orange, choice varieties of the grape and experimental introduction of the choicest semi-tropical fruits.

MARIPOSA.

Gazette, March 15: [Not exactly agricultural notes; but good notes nevertheless.—Ed.]

BIERSTADT, THE ARTIST.—The celebrated artist, Bierstadt, returned from Yosemite Valley, on his way to San Francisco, on Thursday, of last week. His purpose was sketching winter scenes, and a better time could not have been chosen. During his stay a violent snow storm came on, which lasted a day and a night, and the artist had the full scenic effect of every variety of winter weather—snow—rain—clouds and sunshine. The sunset views in the Valley, at any season, are grand, but in the winter, gorgeous beyond description. But few, except those who have their homes in the Valley, have ever witnessed them. We learn that Mr. Bierstadt intends returning during the month of May.

TALE OF A CAT.—Bierstadt, the artist, Fred Ledig and his dog, had a difficulty with a large sized wild cat a few days before leaving the Valley. The dog treed the animal and stayed with him till his master shot and wounded him—bringing him to the ground. A pretty severe cat and dog fight occurred, and the result was a little doubtful, when the artist took a hand and partially stunned the cat with a club, and the dog finished him. The animal is that variety of the puss tribe known as the "lynx," and measured four feet from tip of nose to tail. We had an interview with one of that family once. They are ugly customers.

WINTER WEATHER IN YOSEMITE VALLEY.—Fred Ledig, who, with his family, resides in Yosemite Valley, has kept a memorandum of the weather this winter, up to date. He furnishes the following items: The total fall of rain from the 24th of November to the fifth of March was 27.11-16 inches. Total fall of snow during the same period, 74 inches. Average temperature 25 degrees. The greatest depth of snow within the valley has been about ten or eleven inches.

MERCED.

Argus, March 9: **MORE RAIN.**—Quite heavy showers have fallen throughout the valley this week, still further improving the prospects for good crops. Everywhere throughout this valley grain is forward and growing as fast as could be desired, having had no backset since it was planted. The weather generally throughout the winter has been exceedingly mild, there being no frost to check the growth of vegetation. Should the remainder of this month be equally propitious, there is no calculating the amount of grain that will be produced in this valley. There will be a great lack of working men in the valley this season to harvest the crops, unless farmers make an organized effort to induce immigration from the older States. They should move in the matter at an early day.

TURLOCK.—We were at the new town of Turlock on Saturday last and found the place still improving. The crops in the neighborhood look exceedingly well, and farmers are confident of the yield being heavier than ever before in that locality.

Argus, March 16: **JACK FROST.**—We had heavy frosts on Thursday and Friday mornings of this week, which will proba-

bly kill much of the early-blooming fruit.

The winter throughout has been a remarkably mild one, there having been no backset to vegetation since the commencement of the rains until this week. Trees and shrubbery are putting forth boldly, and all will be in full leaf in a few days.

CROPS.—Crop prospects continue to improve as the season advances. Grain, everywhere in the valley, is usually forward, standing thickly upon the ground and has attained good height. Haying will commence some two or three weeks earlier than in ordinary seasons, and the crop will be very heavy.

MONTEREY.

Argus, March 16: **VERY WELCOME.**—Although during the earlier part of the week heavy showers of rain fell, there has been since Wednesday, bright, beautiful weather, such as does justice to the vernal season; and after the prolonged rainstorms of the past winter, which have extended, with little intermission, into the lovely spring that now unveils her loveliness, it is not strange that we should hail it with peculiar joy. The country around presents now one vast picture of natural beauty, and farmers will welcome the present sunny weather as being most favorable to the immediate prosecution of work that can ill be delayed without damage to their crop prospects.

PAJARO.—A Pajaro correspondent sends us the following items: "Farmers are busily employed putting in their crops, which, from present appearances will be more bountiful than ever before. Our roads are almost impassible, especially to the steamboat landing."

LARGE YIELD.—Last year, Don Rafael Pinto, who resides a few miles from Watsonville, raised on 14½ acres of land the enormous quantity of 80,000 pounds of wheat! He received a few days since, a letter from the Department of Agriculture at Washington, inquiring as to the truth of the report. The report was verified by Señor Pinto and will go on record. So says the *Pajaronian*.

Democrat March 16: **THE Piojo rancho**, located in the southern part of the San Antonio District has been recently sold entire at the rate of \$4 per acre. Containing three leagues, this looks like a pretty low price, but the fact it is purely grazing land and from market about the most distant portion of the county. Four dollars per acre, we venture to say, is just sixteen times more than it was assessed at.

MANY farmers in the southern counties of this State are proposing to cultivate the ramie plant, and there is a great demand for the seed and plant.

It seems to be reasonably certain that the year's harvest of grain will be unprecedented as to yield. The bread question, as respects local needs, will therefore have most satisfactory solution, it being likely that flour and feed stuffs will be cheaper than ever before, here at home. But how about the great surplus of wheat for export? It is very true that the quantity, let it be ever so large, will cut no great figure in the European markets, should it be carried there. That is not the trouble, the question is as to the number of vessels available for such purpose. Of course ships are not apt to come here for grain alone, and the continental railroad must take away, largely, occasion for employing that mode of importation. It strikes us that the ensuing season will demonstrate strongly the necessity for varying the agricultural products of our State—we can't live by bread alone.

NAPA.

Reporter, March 16: From our Calistoga correspondent we learn that the farmers in that vicinity are busily engaged finishing putting in their crops. Grain that was sown early in the season is up and growing rapidly. Fruit trees are in full bloom, vegetation of all kind is putting forth, and everything betokens the reality of spring. The prospects for large crops were never more flattering, and the yield of fruits and grapes will probably be greater than ever before. Various parties are planting out large numbers of vines, many new buildings are being erected and business generally is brightening. The travel to the Lake country is becoming better, as the season permits the repairing of the roads. The roads in the Calistoga District are in a good condition, considering the storms. The road to Hoaldsburg is now opened, and the staging moderate. The line of stages to the Goyers will commence making regular trips in about two weeks.

SAN BERNARDINO.

Guardian March 9: **THE WEATHER.**—Since the pleasant little shower, on Tuesday, heavy clouds have been hanging over

our valley and mountains, indicating rain. If we have no more of those north winds, we have had enough rain to look for a favorable season. The grass and crops generally, though backward in this section of the country, are doing well. We have heard of cases where cattle, unable to restrain themselves from the fresh, green clover, have been rendered uncomfortable thereby. Some spring days have dawned upon us already. The almond has been in bloom for over a month, the peach and plum are now in full, beautiful appearance; the rest of the trees give signs of awakening spring. A few more warm days and nature will be decked in her most gorgeous apparel.

SANTA CRUZ.

Sentinel, March 9: It has been ten years since our mountains, hills and valleys have been so profusely overspread with a sward of beautiful as to-day greets the eye on every hand. The cattle on a thousand hills and the flocks in more numerous valleys, reveal already the great blessing this year of extended rain will prove to California. The grain fields present a freshness and growth unknown to former years, and the fruit so varied in kind will hardly fail to yield its accustomed, bountiful harvest.

SAN JOAQUIN.

BAD FIGURES.—The *Independent* of this morning figures that the wheat for export from the San Joaquin valley will be 150,000 tons. The grain men here and everybody who has figured on the probable product of the valley, estimate that Stanislaus county alone will have 150,000 tons for export. Then we have San Joaquin, Merced, Tulare, and Fresno counties with their immense expanse of acres sown that will furnish not far from 300,000 tons, to be added to the product of Stanislaus. Our own judgment is, based on present prospects of course, that the San Joaquin valley will furnish 400,000 tons of grain for export—nearly three times the estimate made by our cotemporary.

The young wheat on the west side of the San Joaquin river, is two feet high.

The Santa Barbara *Press* says a million almond and walnut trees will be planted around that town this season.

TEHAMA.

Sentinel, March 16: **NEARLY THROUGH.** The farmers of this vicinity are with but few exceptions through seeding. The grain sown in Tehama county is equal if not a little in excess of any previous year, all of which looks excellent, using the farmers' phrase. From Shasta county comes the same cheering news, only more of it, as there has been a great deal more grain put in, in Shasta county than any former year. We have seen a number of farmers during the past week, from the Stony Creek portion of Colusa county; they all speak in cheering terms of their prospects.

YOLO.

Democrat, March 16: **NORTH WIND.**—For several days a north wind has been blowing in this region, which has served to dry up the mud and enable farmers who still have plowing to do to go ahead and finish sowing at once.

OREGON.

NEHALEM.—This is the name of a river of Oregon, which rises near the headwaters of Gale's Dairy and Scappoose creeks, flows in a winding but generally westerly course, and empties into the Pacific nearly forty miles south of the mouth of Columbia river.

The valley is like most river valleys in this State. There is the "low bottom" land, covered with salmon berry bushes and supporting a sparse growth of alder, very easily cleared, very fertile, and possessing the still further advantage of being fertilized every year by the sediment left by the river during its winter freshet; the bench land with its growth of cedar and soft maple, also good farming land, and finally the hills covered with a dense growth of cedar, fir and some spruce. In most parts of the valley claims may be found containing portions of each of these, and as springs are plenty on the hill-sides, each settler may have the coolest and purest water delivered directly into his cabin. As the valley is about one hundred miles long and from two to fifteen wide, here are to be found homes and farms for many settlers. The land is very rich, producing in abundance vegetables of good quality and large size. The cedar is usually fine. In addition to the lands already described, there are many swales covered with coarse grass supporting, in some places, a fine growth of ash.

Much more rain has fallen in Rogue river this winter than during any winter for several years. But a small breadth of grain has yet been sown.

British Africa—Diamonds and Gold.

It is now only about two years since authentic information was received of the discovery, in paying quantities, of diamonds in South Africa. Twelve months ago the diamond fields were supposed to be confined to a region of less than 10,000 square miles. Subsequent explorations have already extended them over an area of about 150,000 square miles, or a territory nearly as large as the State of California; and now comes the reported discovery of gold, and that, too, in wonderful quantities!

English Annexation.

The diamond fields were quite outside of the British Possessions proper, or in fact of any other duly established civilized government; but the Cape Colony government claimed a sort of protectorate over the native tribes which inhabited those regions, which soon after the diamond discovery was extended to actual possession. Two colonies of Dutch settlers, engaged in farming and sheep raising, and known as the Orange Free State and Transvaal Republic, were the nearest duly organized European colonies to the diamond fields. A few months only passed before the diamond discoveries were extended to within the jurisdiction of both those colonies, and now, simultaneously with an announced discovery of gold in the latter named colony, we hear that the Cape Colony authorities, acting under instructions from the Home Government, are issuing proclamations (five in number) annexing to the British Possessions portions of both these Dutch Republics—all in fact that is supposed to be valuable for either gold or diamonds. Of the question of right in the matter we know but little; but from papers and documents before us, emanating from these independent governments, we learn that the right is disputed and solemnly "protested" against. Of course the recent discoveries have led to quite an influx of English miners, so much so that they are said to outnumber the Dutch, and may have invited their friends to come in and assume the reins of government. If so, the English rather have the advantage, and will undoubtedly make it another case of "manifest destiny!"

Another California.

It thus seems almost certain that Great Britain has or soon will come into quiet possession of one of the richest and most important regions on earth—another California in fact, worth vastly more than their Australian possessions. The climate of the region is very much like that of California, and it is equally as valuable for the variety and large yield of its agricultural productions. The country is well timbered, and watered by the Orange river—a noble stream larger and longer than the Sacramento, though as yet but little explored. The gold discoveries have been made in the mountains at the head waters of this river and its tributaries; while the diamond fields are located in what corresponds to our foothills. History shows that nothing hastens colonization like the discovery of gold; and with both gold and diamonds, added to a country of unusual climatic and agricultural advantages, we can see nothing but a brilliant future for this latest El Dorado.

The Diamond Fields.

In their geological structure, are very much like portions of the Table Mountain Range of this State—clearly of volcanic drift—pebbly strata intermingled with tufa scoriae. The diamonds are found in the wash from these deposits, or in the undisturbed deposits where they have been cut through by modern streams.

The "finds" have sometimes been wonderful, and several millions of dollars have already been realized from the diamonds which have been taken to Europe. The precious stones are sometimes found near the surface, but more frequently the diamond-seeker goes down 15, 20 or 50 feet deep to reach the strata in which the object of his search is found. The latter figure is the greatest depth yet opened. The "diggings" are considered quite as good as those of Brazil or even Goleonda. The claims—30 feet square—are staked out by government officers, who collect licenses according to the number of hands employed in each claim—about 42 cents for each hand per month. The revenue derived from this source is devoted to maintaining order, which is everywhere preserved. The actual workers are mostly natives who labor for 75 cts. per day or 50 cts. and rations. There is no danger of the natives stealing the diamonds, a very severe penalty is put upon any person buying a diamond from a native, and they can go nowhere else to sell them.

The strata in which the diamonds are found when first brought to the surface is very hard. It soon, however, "slacks" and is then washed in rockers, similar to "gold rockers." The heavy matter resulting from these washings, and which is saved to examine for diamonds, consists mostly of fine red gravel and variously colored stones, similar to those found upon the beach at Pescadero, and upon the banks of the Sacramento at Martinez. This matter is dried and spread out upon a table where it is thoroughly examined for diamonds; which is

usually done by the claim-holders or members of his family; many of the diamond-hunters being heads of families who have heretofore resided in the vicinity of the mines or in Cape Colony from 300 to 600 mile to the south. The diamonds by working are entirely separated from all dirt, and generally come out bright and clear as drops of water. They however require cutting and polishing to bring out the glitter and sparkle of the true diamond.

At the Mineralogical Museum of Mr. Henry G. Hanks, 649 Clay street, specimens can be seen showing the geological character of the region. At that place may be seen a specimen of the "upper crust" as it is called, which lies immediately under the loose soil; then the material in which the diamonds are found, corresponding to the "cascabalo" of Brazil, which is seen in the siftings or residue of the washing of this substance, showing the minerals with which the diamonds are associated, and which, it will be seen, is identical in character with the well-known Pescadero pebbles. The diamonds themselves, however, are not to be seen—they are rather too valuable for even such a wonderful cabinet as is exhibited by Mr. Hanks. These specimens were obtained from Mr. J. W. Riley, who has recently returned from the diamond fields.

Order and Quiet

Everywhere prevails. No work is done on the Sabbath; the native colonists, who by their number give character to the community have ever been a quiet, industrious, law-abiding people, respecting the laws of both God and man, and always keeping the Sabbath day holy. The English authorities insist upon continuing this custom. The consequence is that life and property is as safe there as in any part of the world.

The Gold Discovery.

As already noted, these discoveries have been recently made and are now confirmed. The gold is found in the Transvaal Republic, along the upper waters of the rivers, above the diamond fields, in a range of mountains quite as extensive and elevated as the Sierra Nevada, and very closely resembling them in direction, position with regard to the sea, and general geological formation. The gold thus far discovered is upon the slope opposite to the sea, or inland. But there is good reason to expect that it will also be found on the opposite or seaward slope. The gold is found in latitude 25 degs. S. and longitude 107 E. from Washington. It is found in both gravel and in quartz. The gravel (surface) is reported very rich and coarse. Several quartz ledges have been found which show rich gold upon the croppings. None, at last accounts, had been explored beneath the surface. About a ton of the quartz and some of the gravel had been taken to Natal for examination and proof of the reality of the discovery; and many persons are leaving for the mines. We gather these facts from extracts from the Transvaal and Natal papers, and from information furnished by Mr. Riley.

How to Get to the Diamond Fields.

There are several well established lines of stages, one or more of which are under Yankee management, with "Concord Coaches," running from the various ports of the Cape of Good Hope Colony, with distances varying from 600 to 750 miles—fare about \$75. The Cape ports may be reached by sailing vessels which are frequently leaving Boston or New York, either direct or to touch there. There is also a regular steamship line from Southampton, Eng., to Cape Town and Port Elizabeth—fare \$150, time, 50 days. Provisions, clothing, etc., can be purchased as cheap at the Cape ports as in England or New York.

AMETHYSTS.—Queen Charlotte's necklace of perfect and well matched amethysts, which was worth \$10,000, in her time, would not bring \$500 to-day, so rich is the amethyst region of Seven Mountains on the Rhine. May not the increased supply of diamonds, now pouring into Europe from South Africa, and the apparently illimitable supply to come, soon effect a similar depreciation in the value of even that most precious of all gems?

FENCING.—The fence is a costly structure. Illinois is said to have ten times as much fences Germany, and Dutchess county, New York, more than all France. A narrow path divides farms in France, Germany and Holland. In South Carolina the improved land is estimated to be worth \$20,000,000; the fences have cost \$16,000,000. The annual repair is a tenth of this. A recent calculation places the cost of fences in the United States at \$1,300,000,000. Nicholas Biddle, thirty years ago, said the Pennsylvania fences had cost \$100,000,000. In Ohio they are put at \$115,000,000, and in New York at \$144,900,000. Some day fences will probably disappear, and boundaries will be marked with fruit trees or neat hedgerows.

A BILL has been sent to Congress setting apart as a public reservation an area of about forty miles square, including the Yellowstone lake and cañon, and the famous Geyser Basin.

Indian Corn and Its Peculiarities.

Indian corn was so called from the fact of its being first discovered by Europeans among the Indians on this continent. It has been styled the king of cereals, and is the pride and glory of American productions. Its generic name is *zea* from a Greek word meaning *to live*. There is but one species known to botanists as belonging to this genus; but there are many varieties, due to climate, soil and cultivation. These varieties are distinguished by the size and color of the grains, the number of rows in the ears, the time required to ripen and other characteristics more or less peculiar and permanent. The number of these varieties is greater than is generally supposed—no less than 120, being known in New England alone.

There is a most marked difference in the quality as well as appearance of many of the varieties. Some are particularly rich in oil and gluten, others in starch. Some excel in fat-producing properties, others in the production of muscle and bone.

The plant is very flexible in its nature and any variety is readily modified by surrounding circumstances of soil, culture, climate or artificial fecundation. Perfect ears have been produced not more than an inch and a half or two inches long, with kernels no larger than a grain of wheat. That same variety, with careful cultivation and without intermixing, has been, in four or five years, enlarged to an ordinary sized ear and kernel. Some varieties have only eight rows of kernels, but most have ten and twelve or more, and even thirty-six have been produced!

Bearing in mind the above characteristics it will be very naturally inferred that we are as yet far from having exhausted all the possibilities with regard to improvement in this valuable cereal. Among the most recently announced novelties in this direction we may instance the following:

"Valuable Variety of Corn."

Under this head the *Bulletin* of this city recently gave the subjoined item:—"We have been shown a sample of corn brought recently from the section of country East of the City of Mexico, known as the Huasteca, which appears to be a very promising variety for cultivation in California. The ears are of medium size, about half way between the small "flint" variety of New England, and the huge "dent" variety generally cultivated in the West. The peculiarity of this Aztec corn is, that while the kernels or grains are very large, plump and white, yielding a large percentage of farinaceous matter, the cob is not much larger than a common lead pencil, fully three-fourths of the bulk of the ear being corn, whereas in our varieties the reverse is nearer the rule. The Huasteca country has a climate not dissimilar to that of the interior valleys of this State, and it is suggested that this corn will probably be found to fill and mature where the common varieties imported from the East fail, from climatic causes. Either for grinding into meal or feeding to animals, the Aztec corn to which we refer appears to have decided merits over any other variety we have seen, and it is a wonder that it has never been introduced here before.

Peruvian Maize.

We recently clipped from an Eastern exchange the following account of a very remarkable variety of corn grown in Peru:—"Among other articles of importance produced in Peru, is a kind of Indian corn, called Caragua. This is of remarkable size, attaining an elevation of ten feet or more, with a grain an inch in length. It grows at a great height in the mountains, and thrives in a poor soil. The yield of corn is said to be sixty per cent. additional to that of the ordinary kinds, and of forage ninety per cent. Experiments recently made in France show it well adapted to the mountainous portions of that country, and it would doubtless do as well in the United States." But perhaps the most

Wonderful Corn Story

Of the season is the following:—"E. O. Judson of Cuba, N. Y., claims to have succeeded in crossing an Indian corn with the Egyptian variety, and has obtained a

hybrid which is prolific to a wonderful degree. The new variety grows about six feet high, and each stalk bears from three to seven ears of good corn. Four good ears is said to be the average growth. The *Rural New Yorker*, Springfield (Mass.) *Republican* and *Prairie Farmer* testify to the truth of the claim. The editor of the *Rural New Yorker* says he has grown in his garden several hundred stalks, none of which have produced less than four ears, and from that number up to seven and eight. The *Springfield Republican* says one man who planted five hundred and sixty-five kernels on the 25th of May, harvested five hundred and sixty-seven stalks, producing from three to twelve ears per stalk, on the 5th of September, and there were by actual count, 2,732 ears. If all this is really true, Illinois will become a four-fold corn-growing State."

Beet Sugar Machinery.

On making the necessary inquiry it will be found that a considerable part of the nice machinery at Alvarado, including centrifugals for the separation of the juice of the beets from the pulp, and the molasses from the crystallized sugars, were made in Germany and imported at large cost. So also of the Sacramento Valley Beet Sugar Company, nearly all of its machinery was imported from Europe, and the mere cost of freight alone, exceeded \$10,000. In view of the fact of the undoubted success of both of these establishments, we can safely rely upon an additional number of beet sugaries in California at an early day; and this consummation would be hastened materially if some one or more of our foundry men would turn their attention in the direction of supplying what is sure to become a certain want. If our farmers by association, or our capitalists, could contract for the requisite machinery, the construction of which would be under their direct supervision, without being obliged to send or make a trip to Europe, to get their orders filled, we should hear more of new sugar factories about to be erected than we do now.

Nothing New—Telegraph in 1817.

The old adage that "there is nothing new under the sun," is again verified in the case of the electric telegraph. In an old work, entitled "Arthur Young's Travels," published in 1793, occurs the following account of what was clearly an approximation to our present system of telegraphic communication:

"In the evening to Mons. Lomand's, a very ingenious and inventive mechanic. In electricity he has made a remarkable discovery. You write two or three words on a paper; he takes it with him into a room, and turns a machine enclosed in a cylindrical case, on the top of which is an electrometer, a small fine pith ball. A wire connects with a similar cylinder and electrometer in a distant apartment, and his wife, by remarking the corresponding motions of the ball, writes down the words they indicate, from which it appears he has formed an alphabet of motions. As the length of the wire makes no difference in the effect, a correspondence might be carried on at any distance; within and without a besieged town, for instance, or for a purpose more worthy and a thousand times more harmless, between two lovers prevented from any better connection. Whatever the use may be, the invention is beautiful.

A RIVAL TO TEA AND COFFEE.—Tea and coffee are threatened with a Brazilian rival, called guarana. Guarana consists of the seeds of a tree known to botanists as the *paullinia sorbitis* which is very abundant. The tree produces a fruit about the size of a walnut, containing five or six seeds. The seeds are roasted mixed with water and dried. Before being used they require grinding when they fall into a kind of powder. The active principle is an alkaloid identical with that found in tea or coffee, but there is twice as much of it in guarana as there is in tea. The effects are similar to those of tea and coffee.

THE ship-building trade on the Clyde, near Glasgow, Scotland, during 1871, has been very prosperous, the total number of vessels launched having been 231, with an aggregate measurement of 196,200 tons. Among the above mentioned vessels were six war steamers of 10,900 tons; and one hundred and twenty-five screw steamers of 158,000 tons. The sailing vessels were twenty-five of 12,720 tons.

USEFUL INFORMATION.

Oatmeal and the Intellect.

At the annual meeting of the American Association for the Advancement of Education, recently held in this city, Professor Haldeman advocated the use of high phosphorized food for teachers, they having much expenditure of brain. He said "the reason why the Scotch were so intellectually acute and active must be attributed to the use of oatmeal in their youth. Oats contain more phosphorus than any other vegetable." He also recommended eggs as excellent food for teachers, in order to increase their intellectual capacities. But the mental acuteness and general intellectual strength which characterize the people of the above-named country cannot be due to the phosphorus of their oatmeal, which is their common breakfast food, for it so happens that wheat contains more of it than oats. The quantity of soluble phosphates in wheat, according to Professor Johnston—himself a Scotchman—is more than one per cent. greater than in oats. In his work on Agricultural Chemistry, pages 503 and 510, the composition of wheat and oats is given in tables.

Oatmeal is, no doubt, very excellent food for man and beast, and so is Indian cornmeal, but neither of them will confer intellectual acuteness upon any man. Dull teachers or dull men cannot be made philosophers either by the use of eggs or oats. We must look to some other cause than oatmeal for the metaphysical mind of the North Britons. That cause is, no doubt, to be found in their education. Common schools have been in existence in that country for two centuries, and the strict family training of children by catechisms being similar to that which used to prevail in New England, and various other parts of our country. The Welsh, the Norwegians and Irish use oatmeal extensively for food.—*Sci. Am.*

Patent Lunacy.

The *Railroad Guide*, in a very sensible article says: There is no more melancholy sight than a man afflicted with this mania—which in many of its aspects closely resembles the passion for gambling—who is poor and dependent upon his daily exertions for the support of himself and family. He has constantly before him the vision of affluence, and with it the pangs of poverty. Experience teaches often in vain, and one failure only seems to gild the brighter the next vagary of invention. We know of men who for years have spent all the time and money they could control to develop and bring into use inventions which it was quite easy to demonstrate would be practically useless. These same men, if remonstrated with for thus following a constantly losing career, are always ready to justify themselves by citing the great inventors whose beginning were equally discouraging and whose ultimate success was nevertheless most brilliant. Alas! if those who reason thus would only study, among other things, logic, so that they might see that because some inventors were in the beginning poor and had a hard time generally, but succeeded in the end, it does not therefore follow that all who exercise the inventive faculties in the midst of penury will emerge ultimately into success and affluence.

THE MYSTERIES OF A HAIR BRUSH.—A writer in the *American Journal of Microscopy* has been exploring the forests of bristles in a hair brush surreptitiously purloined from a lady's toilet stand, and though it contained nothing which we are accustomed to regard with unqualified horror, the results of his investigations prove that there are mysteries ordinarily undreamed of in simple appliances of the toilet. There are concealed in the damp lint of hair brushes, unless kept clean by the use of bicarbonate of potassa or carbonate of soda, many living things, too small for detection by the naked eye, some of which, we are told, are of more than suspicious character, being known as the originators of scaldhead and other diseases of the scalp. The author concludes his article by a caution against wetting the head, recommending dry brushing instead. He also recommends the use of a weak solution of carbonic acid or sulphate of soda as a cleaning material for hair brushes.

THE telegraph cable from Java to Australia has been successfully laid.

Japanese Tea.

A Japanese handbill, which we have found in a package of tea, from Hewes & Richards, reads thus:

"They are both kinds; Yeesay and Sang-ing; it is the name of the mountain; there very much foggy cover the top of the mountain to the foot are constantly. There quality are superior and genuine. Any person who was feeling indisposed may try take a cup of it in a few morning, and will feel much better and good spirit. With expressly packed for Imperial. By Foohing & Co., Yokohama."

This handbill is evidently written by a Japanese and it gives us an idea of Japanese progress in learning our language. Evidently the scholar has confidence that he can make himself understood, and in this he is not mistaken. We learn something from it that may be useful to us. This tea is presented as a superfine article, and its superiority is attributed to the foggy mountain-side on which the tea plants are grown. This suggests that our coast range elevations may be adapted to tea culture.

California experience in tea planting has been so interrupted by untoward circumstances, that a fair trial has not been made. All we have proved is that the plant will thrive if it arrives here in good condition—better one year old than more; and that it must be irrigated in summer. The seed will also germinate, and it is preferable to transplanting. But the tea nut is very oily. The oil even gets rancid and the nut is useless. Be sure, therefore, of your seed before you plant it. We are not certain that palatable tea can be made here. Change of climate often changes properties. Herr Schnell's samples from El Dorado tea plants were not decisive on that point.—*Alta.*

IMMUNITY OF THE PIG FROM INJURY BY SERPENT BITES.—The impression is generally prevalent in the United States that the common domestic pig is an especial enemy of all kinds of serpents, and that it is capable of receiving the bite of the rattlesnake and copper-head without the slightest personal inconvenience or injury. This same immunity from harm would seem to exist in other countries, as a late writer in the *London Field* remarks upon the fondness of the pigs in India for the cobra de capello, and states that he has repeatedly seen them in conflict, and has observed the pig to be bitten over and over again in the snout and about the face by the writhing reptile, and in no instance with the slightest ill results to the aggressor.

BLUE GLASS FOR GREENHOUSES.—We find that Robert Buist, Sr., indorses the use of blue glass in greenhouses and other structures for forcing plants, etc. In a communication to *Tilton's Journal of Horticulture* he says:

"I applied a coating of Prussian-blue paint, six inches wide, up the center of each row of panes; the result was electric, and in a few days the plants assumed their beautiful green color, and the trusses of bloom came to maturity. The greenhouse had been used to grow geraniums for bedding purposes, but they had lost their color every year about the first of April. The plants were completely rejuvenated by the blue glass."

COLORLED CANDLE LIGHT.—Wax candles are made of different colors, but they all emit a white light. Why may not candles be manufactured, by introducing certain chemicals into the material from which they are made, so as to show a variety of colors, such as blue, red, green, etc.? By arranging such candles in tasteful groups, beautiful effects may be produced in illuminating buildings. If some ingenious chemist will devise a way of embracing a cheap chemical with any of the material used for illuminating candles so as to render the light emitted from them of any desired color, he will make a fortune by his discovery.—*Commercial Bulletin.*

GUINEA GOLD.—The *French Journal Official* says that gold production is rapidly increasing in the French colony of Guiana, of South America. The annual product has enlarged from 25,974 francs in 1856 to 1,685,643 francs in 1871. The product between 1856 and 1869 amounted to over ten million of francs. Gold mining industry in Guiana pays an annual tax of about twenty cents per acre, and an export duty of four per cent. upon bullion. The industry promises to attract to these tropical regions a numerous and energetic population.

GOOD HEALTH.

Poisonous Exhalations.

Poisonous exhalations from drains are a far greater source of mortality than is generally supposed. Prince Albert, consort of Queen Victoria, no doubt came to his end from such a cause, and the heir "apparent" has just been snatched from the jaws of death, to which extremity he was undoubtedly reduced by breathing the exhalations from a defective drain. If all the guards that are usually thrown about royalty, fail to secure immunity from such exposure, what are we to expect in humble life, when, from necessity exposure is often knowingly submitted to. Only two or three weeks since the English mail informed us that a large number of operatives in a factory in Preston, England, became suddenly ill, and had to cease work. Several had already died, and others were not expected to recover. An examination showed that they had been working over a defective drain. No doubt the list of mortality is largely swelled by such cause, operating in unknown ways and quarters in every large city in the world, to say nothing of less populous neighborhoods. It is time that the public was taught to have more regard to such dangerous exposures in less populous neighborhoods. It is time that the public was better informed with regard to the danger from such exposures, and that more attention was paid to the drainage system of our cities and houses by those who have immediate official authority in such matters. Defective drainage and impure milk, lead to more deaths than any other ten or a dozen causes combined.

The Cause of Whooping-Cough.

The germ-theory of disease, which some pathologists seek to extend so widely, has been applied by Dr. Letzerich to explain the extremely infectious disease, whooping-cough. He thinks he has discovered a form of fungoid growth which vegetates in the air-passages, and by its irritation causes the convulsive attacks of coughing. The expectorated mucous in patients suffering from this disease is said to contain masses of brownish red spores with occasional threads of mycelium, which in later stages of the disease become very abundant. The spores are colored blue by iodine and sulphuric acid. These observations were controlled first by cultivation of the spores on pieces of bread soaked in milk, and further, by introducing masses of the fungous growth thus obtained into the trachea, of young rabbits. This was effected by tracheotomy, but the animals rapidly recovered from the effects of the operation, and in a short time became affected with a cough of a very violent and noisy character; in fact, a genuine whooping-cough. The rabbits thus effected were killed, and their air-passages and lungs found to contain an enormous quantity of the same fungous as that met with in the sputa from human whooping-cough; and, in fact, the mucous expectorated by the rabbits showed precisely the same appearance.—*Microscopical Science.*

CARE OF THE FEET.—Concerning this subject the *Scientific American* very truly says: "Many are careless in the keeping of the feet. If they wash them once a week they think they are doing well. They do not consider that the largest pores are located in the bottom of the foot, and that the most offensive matter is discharged through the pores. They wear stockings from the beginning to the end of the week without change, which become perfectly saturated with offensive matter. Ill health is generated by such treatment of the feet. The pores are not repellants but absorbents, and this fetid matter, to a greater or less extent, is taken back into the system."

The feet should be washed every day with pure water only, as well as the armpits, from which an offensive odor is also emitted, unless daily ablution is practiced. Stockings should not be worn more than a day or two at a time. They may be worn one day, and then aired and sunned and worn another day, if necessary.

AMMONIA AS A CURE FOR SNAKE BITES.—As many as 8,000 persons die annually, in British India and Burmah, from the effects of snake bites. The Inspector of Police to the Bengal Government now reports that of 939 cases, in which ammonia was freely administered, 702 victims have recovered, and in the cured instances, the remedy was not administered till about 3½ hours after the attack, on the average. In the fatal cases, the corresponding duration of time was 4¼ hours.

Physical Development.

T. W. Higginson has taken pains to compare the vital statistics of several generations of two old New England families, and he finds to the dismay of those who mourn the physical degeneracy of woman since the days of our great grandmothers that the stock has improved, if anything. He adds:

No man of middle age can look at a class of students from our older colleges without seeing them to be physically superior to the same number of college boys taken twenty-five years ago. The organization of the girls being far more delicate and complicated, the same reform reaches them less promptly, but it reaches them at last. The little girls of the present day eat better food, wear more healthful clothing and breathe more fresh air than their mothers did. The introduction of India-rubber boots and water proof cloaks alone has given a fresh lease of life to multitudes of women who otherwise would have been kept housed whenever it so much as sprinkled. It is desirable, certainly, to venerate our grandmothers, but I am inclined to think on the whole that their great-granddaughters will be the best.

BIG SUNDAY DINNERS.—A Sunday's dinner is made the most sumptuous meal of the week in a great many households, and the guests retire from the table more like gorged anacondas than intellectual human beings, with the result that during the whole afternoon there is such an amount of mental, physical and religious sleepiness, if not actual stupidity, that no duties whatever are performed with alacrity, efficiency, and acceptableness. The Sunday dinner made of a cup of hot tea, some bread and butter, with a slice of cold meat, and absolutely nothing else, would be wiser and better for all; it would give the servants more leisure; the appetite would be as completely satisfied half an afterward, while body, brain and heart would be in a fitting condition to perform the duties of the Sabbath with pleasure to ourselves, with greater efficiency to others, and doubtless with larger acceptance to him toward whom all our service is due.—*Hall's Journal of Health.*

EXPOSED ARMS.—A very distinguished Paris physician says: "I believe that, during the twenty years I have practised my profession, twenty thousand children have been carried to the cemeteries, a sacrifice to the absurd custom of exposing their arms. Put the bulb of a thermometer into a baby's mouth and the mercury rises to ninety degrees. Now carry the same to its little hand; if the arm be bare and even cool, the mercury will sink to fifty degrees. Of course, all the blood that flows through these arms must fall from ten to forty degrees below the temperature of the heart. Need I say, when these currents of the blood flow back to the chest, the child's vitality must be more or less compromised? And need I add that we ought not to be surprised at the frequently recurring affections of the tongue, throat, or stomach? I have seen more than one child, with habitual cough or hoarseness, entirely relieved by simply keeping the hands and arms warm."

SINGULAR DEATH.—Mr. E. C. Chambers, the Park street station agent of the Medford branch of the Boston & Maine railroad, met with his death in a very singular way, some days since. His little daughter was sick with the diphtheria, and he put his hand on her mouth for some purpose or other, and the child seized upon his hand and bit it. The marks of the teeth were very slight, comparatively, but the skin was broken slightly, and the poison from the teeth was transmitted through Mr. Chambers' system, and after a week's illness, during which his body became much swollen, he died.

The prospects of medical education for women are brightening. The medical faculty of Moscow, Russia, it is stated, have not only decided that the privilege of acquiring a thorough medical knowledge would be of utility to women, but have "resolved to admit them to the educational courses and lectures of the University, and to the privilege of following all the labors of the Medico Chirurgical Academy."

CUNDURANGO has had a fair trial at Bellevue Hospital, New York, and has proved a failure.

CURE FOR DIPHTHERIA.—A simple treatment of diphtheria may be found in the use of lemon juice. Gargle the throat freely with it, at the same time swallowing a portion, so as to reach all the affected parts.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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Saturday, March 23, 1872.

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We wish to add 10,000 new names this year to our flourishing list of subscribers. There are 25,000 homes on this coast that ought to have the RURAL PRESS, and would have it, too, if fully advised of its value. We ask our present readers to help extend the circulation of our paper. Talk of it to your neighbors, show it to them, and point out the importance of its information. Send for free sample copies, and urge such as you believe would be benefited to subscribe for it.

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RECEIVED.—We are again under obligation to White & Baner, newsdealers in this city, for the latest copies of Australian, China, New Zealand and Sandwich Island Papers, viz. the Melbourne Australian; the Sydney Mail and New South Wales Advertiser; the New Zealand Herald; the Hongkong Overland China Mail; and the Honolulu Commercial Advertiser.

FREE SEEDS.—We are distributing a considerable quantity of seeds among our subscribers. It is particularly desired that persons who receive and propagate them, should report the success of their experiments to the Agricultural Department, Washington, through the RURAL PRESS, or to the Department direct.

A FARM with shade and fruit trees set around the house will sell for two hundred to one thousand dollars more than if there were none.

Peanut Culture.

Peanut stands, where the freshly baked nuts are offered to the passer-by, are now among the institutions of all our large cities from Maine to Texas; and hardly a village of any pretensions that has not its peanut vender, whilst railroad stations are the real elysiums of the retail craft. The quantity of peanuts sold in the United States annually is known to be thousands of tons. Until California placed her product upon the markets of the world, the best peanuts were grown in Virginia and two or three of the more Southern States; now the product of those States, is too often sold under the name of California peanuts. There must be a reason for this, and there is, and it is simply because our peanuts are the best the world knows anything about.

A correspondent wants to know how to raise them. Thinks he has good soil for them, it being a sandy loam, deep and rich, and never suffers from drouth. We have raised peanuts successfully and profitably and we did it just in this way. On a light, sandy soil, rich only from the overflow of the river once in 3 or 4 years; but you can grow them well on any land that will give you a good crop of melons; plow not too deep, 5 inches is enough, because the nuts will not begin to set freely till the roots meet with the harder sub-soil below, harrow all down, fine and smooth. Now with a suitable drill or other implement open furrows four feet apart, so deep that when the seed is in it can be easily covered from one and a half to two inches deep.

Break the peapod, take out the kernels without breaking the skin and drop them in place, every two feet in the row, cover two inches deep, or a little less will do if the ground is moist near the surface. When the vines are 6 or 8 inches long they begin to blossom. Now cover all the crown of the root for 4 or 5 inches around the center, with an inch of soil, but leaving the ends of all the vines uncovered. The object of this is to press down and keep moist the stocks of the vines, from which the bearing roots shoot downward from under every blossom. It is a mistake that some make in covering the vines two or three times in this way; it is worse than useless, as it causes a larger and later setting than can possibly mature, to the injury of those nuts which would otherwise have fully matured. Actual experiment with vines covered once, twice and three times convinced us that larger and fuller meat pods were grown upon such vines as were not covered at all; but the yield was greater from those covered twice or three times, but at the expense of quality.

The cultivation consists in keeping the ground by whatever implements used, entirely free from weeds. Gather in October. Forty bushels is considered a good yield per acre, and the crop will pay from \$100 to \$150 per acre over entire cost of cultivation. We have personally known this amount realized in a favorable season.

Raspberry Culture.

We are asked in regard to the culture of the raspberry, why it is that just before the berries fully mature a great many seem to dry up on one side, whilst the other seems comparatively good and sound and goes on ripening, but of course producing only an imperfect berry. We give as a reason and the true one, that the vine lacks moisture at the roots; either because the earth is naturally too dry for the raspberry, or it is over-run with grass or weeds that are extracting the moisture from the soil that ought to go to nourish the plant.

The raspberry is decidedly a surface feeder, so that weeds and grass act directly upon the sources of nourishment. It is for this reason that stirring the ground deeply during the fruiting season, is injurious, because it destroys a great number of the fine surface roots, which are the chief feeders of the plant. Probably none of the small fruits or berries are so much benefited by a liberal mulching of coarse manure, straw, leaves or sawdust, as the raspberry. It keeps the ground moist at the surface, and if thick enough will keep down nearly all the weeds. Next to mulching, a judicious irrigation, particularly during the season of the ripening of the fruit, will be very certain to insure a good crop of sound berries on a rich and otherwise suitable soil.

RECEIVED.—We have received a pleasing article from M. A. F., which will appear in our next.

Value of Lands.

A correspondent at Pittsburgh, Pa., F. S. B., wants our paper; also information as to value of farming lands in the valleys adjacent to San Francisco, as he desires to become a resident of our State at no distant period. Similar letters are pouring in upon us from other Eastern States and Europe, and we would gladly answer by mail every one of them; but we cannot find the time to do it.

Besides it is quite impossible to fix upon anything like a standard of value, that will apply alike to the lands even of a limited section of the State. The value of cultivated alluviums will be found to range from \$30 to \$200 per acre, depending entirely on their proximity to the cities and value for gardening and the culture of small fruits. Improved lands in Napa, Sonoma and Petaluma valleys, for general farming purposes can be procured from \$50 to \$100 per acre, and the same range of prices would apply to San José valley and the Sacramento in the vicinity of the city of Sacramento; also to the lands of the San Joaquin valley in the vicinity of Stockton.

If we look among the delta islands of the Sacramento and San Joaquin rivers, we find lands unimproved by levees and ditches, worth from \$2 to \$4 per acre; whilst the same lands improved by levees and ditches at a cost of from \$4 to \$8 per acre jumping at once to a value of from \$25 to \$30 per acre. There are foothill farms, superior for the production of fruits and vines, worth from \$8 to \$25 per acre, and if carrying vineyards of 3 or 4 years old, every such acre is worth from \$100 to \$300 per acre, because it pays a large interest on these values; though if sold together with the balance of a farm would not realize these figures.

Thus, proximity to our cities; the situation of the lands whether alluvium or adjoining high and dry lands; improved or unimproved; fenced or unfenced; facilities for the early and cheap transportation of produce, and other contingencies, all serve to make the prices of lands extremely variable, even within the compass of a few miles. But we have lands for all who come, at prices, upon which a large interest on cost can be realized.

Fires in the Grain Fields.

The annual loss of grain by fires before or during harvesting, is so common in California, as almost to be considered as a matter of course. Hundreds and even thousands of acres are sometimes the result of a single season's burnings from what are called accidents, but more properly should be charged to gross carelessness, on the part of sportsmen in many instances, and sometimes to the match thrown carelessly down after lighting the inevitable pipe or cigar, or from phosphorus used for poisoning squirrels.

Many of the most damaging of these losses result not so much from the burning of a single field large or small, as from sweeping fires that pass from one man's field to another and so on to the next, until thousands of acres are laid waste, and the whole profits of a season's labor swept away in a day. Often it happens in such instances that but for an intervening road or highway, the destruction would have been immensely greater.

We propose a defence against these destructive burnings, not in highways or ditches, or belts of naked plowed land, for all these would be attended with cost and labor to maintain them; but we do suggest that our farmers sow and cultivate a belt of 10 or 20 yards in width of alfalfa entirely across their great wheat fields at such wide distances apart as they think they could afford to lose the grain between, rather than make them closer together. These belts of green, succulent alfalfa, would be almost as good a protection as water to a sweeping fire, and better than ordinary traveled highways, that have proved a barrier to the further progress of field fires.

The alfalfa could be cut immediately after harvesting of the grain as a valuable crop of itself, paying all the cost of its production; whilst a second or third crop could be either cut or allowed to remain upon the land, as winter pasture or grazing grounds for the famishing herds so common to California winters, from the negligence of many stockgrowers to provide any food at all for their stock during the winter months.

The cultivation of alfalfa, on the sage lands of Nevada, is reported a success.

Dwarf Apple Trees.

A few square rods of ground set with dwarf apple trees is a perfect little orchard in miniature, in every respect except the size of the fruit produced; and this is a singular and pleasing feature in dwarfs, that whilst the tree is kept down to a size admitting a large number of varieties upon a small plat of ground, the size of the fruit is not lessened or its quality deteriorated.

There are but few more beautiful objects in the vegetable kingdom than a beautiful tree; and when we get a fine pyramidal dwarf apple tree laden with its rich and luscious fruits, we get a concentration of the useful and beautiful. Apple trees are as easily dwarfed as pears; but they differ from pears in this, that they cannot go outside of the apple family, for stocks, as the pear does from any kind of pear, to the quince as a means of dwarfing.

There are two varieties of apples that will dwarf any other apple grown upon them. These are the Paradise and Doucain; and these again differ from each other. The Paradise is the extreme, whilst the Doucain is a medium between the Paradise and the common varieties. The Paradise is therefore the best for very small gardens, the Doucain for more extended grounds. Both make beautiful trees, and as the object of the grower is more to obtain a large number of varieties, than quantity, they are a pleasing embellishment to the home of the man of few acres, and epicurean in his taste for fine fruits.

Melon Sugar Making.

In a few weeks from this we intend to publish a pamphlet on the manufacture of sugar from melons, canteloupes, etc., as practiced in Hungary and Northern Italy; giving full and complete instructions, from the cultivation of the melon, through every stage and process of manufacture, to the clear syrup and granulated sugar, and in such language as will enable the big boy of any farmer's family to conduct the process satisfactorily and with profit.

We intend to make it a popular little book of instruction, that every farmer who has suitable land for melons will want. The work will be prefaced with a short history of beet sugar making, as an established industry in California, with a statement of its present condition and prospects.

The work will also contain instructions for the making of syrup and sugar from potatoes. The syrup being the article so commonly sold as genuine strained honey. We intend to sell the work at fifty cents a copy, that the price may not be in the way of its general dissemination.

About Locust Seed.

A friend who declares himself a novice in the matter of tree growing, writes that a year ago in March or April, he planted a half pound of black locust seed and about the same quantity of yellow locust, after soaking them in warm water over night; but that not a single seed came up. Now he has received as many more seeds of the same kind by mail, and wants to get them to vegetate if possible.

We simply say to our friend, wait till about the first of April, then pour on to your seed two quarts of boiling hot water and let them stand 24 hours. Most of them will be found to have more than doubled their size; these plant at once, and pour boiling hot water over the remaining ones which will cause them to swell also; plant, and they will come as certain as corn or beans, if the seed are not more than 3 years old.

ANALYSIS OF SUGAR BEETS.—Prof. A. Boelker has made numerous analysis of sugar beets from different localities and of different seasons, from which are obtained the following general result: Large beets contain more water and less sugar than small ones. By freely manuring the land a larger crop but a poorer quality of beet is obtained, thus causing an increase of the salts and substances obstructive to the crystallization of a part of the sugar. The part of the beet which is above ground holds more nitrogen than the part which is buried in the earth. Experiments are being made in this State to reduce the size of the beet, and at the same time keep up the quantity of the yield by sowing them closer together. It remains to be seen what effect thicker sowing will have upon the chemical constituents of the root.

Wool Report for 1871.

We have received from Miller & Co., of San Francisco, their annual Wool Report for the last year, and as it contains many points of interest we extract therefrom. They give as the total receipts of wool at San Francisco from all sources domestic and foreign as follows:

SUMMARY OF RECEIPTS.

Spring clip.....	lbs. 12,649,600
Fall clip.....	9,234,000
Pulled Wool.....	90,125
From Humboldt, Oregon, Washington Territory, and British Columbia.....	1,187,160
From Sandwich Islands and Australia.....	1,016,463
From Mexico.....	1,090

Receipts from all sources.....	lbs. 24,178,438
Add stock on hand Jan. 1st, 1871, in store, and amount held for securing and shipped.....	592,470

Total..... lbs. 24,770,908

SHIPMENTS.

By Railroad to Eastern markets.....	gross lbs. 20,598,694
By Steamers via Panama.....	do. 2,736,707
By Sailing vessels via Cape Horn.....	do. 401,659
To Oregon.....	do. 103,000
To Woolen Mills in the interior.....	do. 188,134

do. 24,028,194

ON HAND AND RETAINED FOR LOCAL MILLS.

Wool on hand Feb. 29th.....	lbs. 21,000
Stock City Woolen Mills 1871..	2,703,000
do.....	do. 2,724,000

Total..... do. 26,752,194

STATE PRODUCTION.

Spring Clip received.....	lbs. 12,649,600
do. retained by Marysville W. M.....	138,300
do. do. Merced Falls.....	48,000
do. do. Los Gatos Man'g Co.....	11,532
do. do. Stockton Woolen Mill (estimated).....	120,000
do. retained by San Jose W. Mill.....	None.
do. forwarded East from the interior (nett).....	421,765
Fall Clip received.....	9,146,700
do. retained by Marysville W. M.....	124,700
do. do. Merced Falls.....	110,000
do. do. Stockton Woolen Mill (estimated).....	90,000
do. do. San Jose W. M.....	None.
do. do. Los Gatos Man'g Co.....	None.
do. forwarded East from the interior (nett).....	436,541

[NOTE.—The Sacramento Woolen Mills' idle during the year.] Total Fleece.....	lbs. 23,286,128
Pulled Wool received.....	lbs. 90,125
do. manufactured in San Francisco.....	900,000
do.....	990,125

Total product of California for 1871.....	lbs. 24,276,253
do. do. 1870.....	19,460,565

Increase..... lbs. 4,815,688

Sheep Husbandry in Connection with Farming.

Having repeatedly called attention to this subject in our Annual Circulars, we now present our readers with the result of two years experience by parties who were induced to make the experiment. Many others could be presented, did space permit, showing a similar result. Geo. P. Loucks, a farmer, of Antioch, Contra Costa County, says:

In 1869 I purchased 114 sheep at a cost of.....	\$490.00
Interest for two years.....	122.88

Nett sales of wool for 2 yrs.....	\$366.98
Sales of lambs, old ewes and bucks.....	440.00
Add Interest.....	33.12

Nett cash gain.....	840.10
Stock on hand Oct. 1871, 179 head, at price offered for them, \$3.75 per head—average.....	671.25
Total gain in two years.....	\$898.47

In the above, no credit is given for losses from dogs and neglect, amounting to \$51, or lambs slaughtered for family use, not less than 25 head. He says: "I am of opinion that the value of manure and cleaning up weeds, is fully equal to value of use of land. I have re-sown the land occupied by them in 1870, and it is evidently clean of noxious weeds. Have seeded only about thirty acres occupied by them last year (the balance is too wet to plow) and it is almost entirely free of weeds; in fact, is much cleaner than the same land was by summer following three years since. In conclusion, I consider my sheep a clear profit." O. Hubbel, a farmer, of Tomales, Marin Co., says: "My experience in sheep raising has not been very extensive.

In the fall of 1869, I invested for 21 head.....	\$130.00
Sales of wool and 5 head, the first year.....	\$80.00
Sales of wool second year, and losses by dogs.....	140.00
Cash gain, without interest.....	220.00
My flock now, Feb. 2d, 1872, consists of 70 head of old ones, at \$4.....	280.00
And 45 lambs, valued at \$2.....	90.00
Total gain in two years.....	\$460.00

"In connection with farming, sheep will pay their pasturage in destroying weeds, and in what they leave on the land."

The Future Prospect.

The outlook for the present year is one of great encouragement to our wool growers. In indications point to prices much above those of last year, and judging from samples already at hand, the incoming clip will equal, if it does not excel in quality of staple and condition of fleece, that of any previous year. From losses by storms and floods, removals, general shearing last fall, coupled with the thorough cleansing from so wet a winter, we are of opinion that in weight it will not greatly exceed that of the spring of 1871. There is, however, scarcely a doubt but the fall shearing, from the large in-

crease of lambs and abundant pasturage in all directions, will exceed in volume that of this spring. No apprehensions need be entertained in regard to any material reduction of the duties on wool, by the present Congress, as we are assured from the best authority, that "if reduced at all, they will not be lessened more than ten per cent. from what they now are."

Oriental Fan Palm.

We here present our readers a truthful illustration of one of that great family of plants known to botanists as Palmaceæ. All the plants of this order are native of tropical or semi-tropical countries, but there are varieties that will flourish and become objects of great beauty even in California where care is bestowed upon their propagation. In their native clime, they are considered among the most valuable of all the tree plants given by a kind providence to man, as affording food and ornament and numerous objects of economical importance. Wine, oil, wax, flour, sugar and salt, says Humboldt, are the produce of this family of plants; to which Von Martius adds, thread, utensils, weapons, food and habitations.

The date tree is usually classed among the palms, and the palmetto is a dwarfed variety.



ORIENTAL FAN PALM.

They grow readily from seeds. There are two varieties known as Fan Palm and the Nekau Fan Palm, that are beautifully ornamental, the seeds of which, with those of the Areca Sapida, (N. Z.) palm, and the Cordyline Indivisa, of the palm species, can be had at the seed store of E. E. Moore of this city, to whom we are under obligations for the use of the illustration here given.

EUCALYPTUS.—In answer to E. O. of Elk Grove: Seeds of the Australian gum trees of several varieties, can be procured of seedsmen who advertise with us, at \$2.50 an ounce; if in large quantity, at a reduction from this amount. They are also sold in 50 and 25 cent packages. The Blue gum as a variety, seems to be preferred by planters in California, but why, we are at a loss to determine. Our best botanical authorities on the subject, give the preference to the variety known as "Rose Iron bark," which in its native clime often attains a height of 200 feet, with trunks entirely free from limbs to a height of from 100 to 150 feet.

It is rather difficult to say in what particular they would be better than the trees you name, Black walnut, Black locust or Chestnut, except it be in their extreme rapidity of growth. But the Gum, of course, can never attain to the height mentioned above, except they are grown in close forest form, in a moist, deep and rich soil.

AZTEC MAIZE.—One of our patrons, asks if there is any of the Aztec maize in any market of the State, or if any agriculturist in California has it.

Shade Trees vs. Live Stock.

EDS. PRESS.—Why talk about forest culture and tree planting, while stock ranging in every direction would destroy them as fast as we could plant?

I am a resident of San Ramon valley, which is wonderfully picturesque, in many respects charming; but during certain months as hot as that immortal place which it is not considered polite to mention. Now if the road sides could be lined with trees, the whole aspect would be changed, for driving along beneath their cool shadows, the traveler would regard with complacency the glowing field, the very sight of which had been wont to call forth a fresh gush of perspiration, and the hills rising on either side with their misty veils of grey or violet palpitating in the heated atmosphere, and would look without commiseration upon the farmers' homes, sheltered beneath thrifty orchards and spreading vines.

I am certain that nearly every farmer would gladly plant trees along the roadside which border on his land if there was any chance for them to thrive, and in three years from this time these trees would make a glorious avenue. Now the residents of the villages, who have no pastures of their own, keep each a cow, or cows, and allow them to range on the highways; so that unless we can have a tress-

The Garden.

Those who at our suggestion three weeks ago commenced in earnest to have for the first time in their lives perhaps, a good vegetable garden, must not forget to plant every two weeks, a new bed of lettuce, another of peas, and a large one too, for there cannot be too many of this delicious vegetable. Plant also row after row of bush beans, of 3 or 4 varieties, and as soon as the season and ground will permit, plant the Lima, as the best of all beans and of which, like peas, you cannot have too many.

You will want some dry next winter, a full supply for seed next spring, and the balance of your crop be it ever so large, will bring you the highest price of any bean in the market. If your ground will grow corn plant as soon as the first of April, as many hills as will be likely to give the family a full taste around at the first pulling. If frost should touch it after it is up and nip it somewhat, still the roots are increasing in number and strength, and we have generally found that such early planted corn, does give us earlier ears, than corn planted a month later, though we have heard men argue the contrary.

If you want to start a few early cucumbers and melons, take a warm spot in the garden, say the south side of a board fence; raise the soil in hills 5 inches above the ground level, plant the seed an inch below the surface, and then surround each hill with a box 5 inches deep, 10 or 12 inches square, without top or bottom, thus □ Plant 8 or 10 seeds in each box—to be finally thinned out to four—and cover with a single pane of common window glass, kept in place by 3 or 4 tacks. When all danger of frost is passed and the weather uniformly mild and warm, remove first the glass for 3 or 4 days and then the box entirely. By this method a gain of a full month can be had over direct open planting, waiting for the proper season.

ARTICHOKE.—The seeds of this edible can be started like the sweet potato, in a warm bed in a sunny part of the garden, and when the plants are 4 or 6 inches high, transplant to the prepared plat of rich mellow soil, rather moist than dry. Set one foot apart in rows 2 feet apart and keep them clear of weeds. The tubers can be unearthed in the fall or remain in the ground through the winter.

If seed tubers are abundant or can be obtained at little cost, they can be planted in well prepared ground at once, like the potato, saving the trouble of transplanting the young shoots.

TANNIN IN WINE.—The use of tannin from grape seed for clearing wines, notwithstanding many adverse opinions, seems to be on the increase in Europe, and *Le Sud-Est* gives reports of comparative tests which are in favor of its use. The tannin is obtained by digesting 12 loth (about ½ lb.) of pounded grape seed with about 1.2 lbs alcohol in a closed vessel. The mass is stirred frequently during 15 days, filtered, and the residue again treated with alcohol. One pound is sufficient for 500 gallons of wine.

FIRE AT PETALUMA.—A destructive fire occurred at Petaluma, Sonoma Co., last week, which was the most extensive one that ever happened there. The losses are estimated at over \$75,000.

The losses sustained, says the *Journal and Argus*, by the occupants of the burned district amounts to infinitely more than the buildings that were destroyed, as most of the occupants of the section were young men, just beginning life, and whose loss will be sufficiently mitigated by insurance and salvage to enable them to begin anew. The buildings destroyed will, Phoenix like, arise from their ashes as soon as workmen can possibly put up the brick-walls. All the burned district will be immediately built up, and this time the structures will be of brick and fire-proof.

BLOODED SHEEP FOR OREGON.—Messrs. Teal & Goldsmith will to-day ship thirteen head of full-blooded Cotswold sheep to Oregon, on the steamer Oriflamme. The animals were bred in the counties of Bourbon, Fayette and Harrison, Kentucky, and were imported to this State by Colonel Peter Saxe, in August last. The buck weighs about 250 pounds, and the ewes will average 200 pounds, though suckling large lambs. Some of the lambs, dropped in November last, are estimated at seventy to seventy-five pounds each, and have now a growth of wool five inches in length. The grown sheep have now heavy fleeces of wool, notwithstanding they were shorn the last of October. The sheep are said to be the finest ever received in this State.—*Call*, March 20.

pass law our roads must remain unsheltered. M. N. B.

There is a good deal of solid, clear common sense in the foregoing remarks, and quite worthy of careful and serious consideration.—Ed.

No Rain During Harvest.

There is one feature of our climate, the almost entire absence of rain from May to October, that will forever stamp California as a grain-growing country. The harvest never commences till after the very last rains of the spring season have ceased; and then for week after week and month after month, the harvesting goes on; and with no more thought as to the probable state of the weather the next day or day after, than though it couldn't rain if it tried.

Harvesting being finished, and the grain and straw of such as was not cleaned by the header, being thrown into huge piles, with no topping-out or covering at all, is now subjected to the operation of threshing; and this again is carried on for month after month without a drop of rain, till it actually becomes monotonous, for the very want of a shower if only for variety. And in this way and in such a climate is the great and annually increasing wheat crop of California harvested, threshed and gathered into sacks, to stand perhaps for weeks again in the open field, before it is delivered at the great grain depots or places of final shipment. Let Eastern grain growers think of this.



Rosy Cheeks and Pale Faces.

Mrs. May was seated in her pleasant nursery, with her little family around her. It was a happy group. The cheerful young mother, with her smiling face and loving heart, was the center and life of it, while the merry children, unchecked in their innocent mirth, filled the room with the music of their glad voices.

Harry and Ned were very busy over a box of blocks, with which they built houses of various styles of architecture. May, seated in a small rocking chair rocked a large doll and hushed it with great tenderness. Susie and Clara were trying to work out a rather complex puzzle, and their droll mistakes caused much jesting and laughter. A golden canary swung to and fro in the sun-illuminated window, and seemed trying to drown even the voices of the children in his gushing song.

In the midst of all this mirth Mrs. Harrington entered, accompanied by a boy of seven and a girl of five years. After an affectionate greeting between the friends, these children drew near to the table to watch Susie and Clara at their game. They were pale, listless and inanimate, and the mother sighed as she marked the contrast between them and Mrs. May's rosy group.

"I declare, Julia, you are a happy woman," she said.

"Very happy, Clara," said Mrs. May, with a merry laugh, "but you need not sigh so deeply over it."

"I think I was a little envious just at that moment."

"You, envious of me?" said Mrs. May. "Nay, you must be jesting. It would be more in keeping were I to envy you, with your grand new house, and all its elegant surroundings."

Tears sprang to the eyes of the wealthy Mrs. Harrington, as she replied:

"All the luxuries which wealth can give, I would gladly resign, if I could see Emma and Arthur as strong and as lively as these little ones of yours. You do not realize what an inestimable blessing good health is, nor how the want of it can mar the brightest fortunes."

"Do I not! Why, Clara, it is the study of my life that these little ones of mine may enjoy this blessing."

"Do you mean to say that a mother's care can make her children strong and healthy?"

"I think it may do a great deal for them in that respect. To a few simple rules carefully followed, I partly ascribe it, that my darlings are ever in such robust and vigorous health."

"Pray, give me the benefit of some of these rules. If they have such power, every mother ought to know them."

"My first rule is plenty of fresh air and sunshine. I always secure a large and well-ventilated nursery, where the morning sun may shine in. Plants do not thrive in the shade, neither will children. Rosy cheeks and buoyant spirits are not to be found in close and shaded rooms. We are more dependent upon the sun for life and coloring than we are apt to think."

Mrs. Harrington looking thoughtfully, said: "My nursery is on the shaded side of the house. I chose the room for that purpose, because it seemed more convenient, and my nurse is such a careful body, that she keeps the blinds partly closed, for fear of fading the new carpet."

"My next rule is frequent bathing, in cold water, all the year round," said Mrs. May.

"That may do for your chubby babes," said Mrs. Harrington, "but my children never could bear it. Emma is particularly sensitive to cold. I am always careful to have her bath well warmed."

"As good a receipt for colds as you could find, my dear Clara. In the winter, or in the spring and fall, the least change in the temperature in the air is sure to prove hurtful after the warm bath. A rapid sponging in cold water, in a heated room, with a thorough after-rubbing, I never found injurious to the most delicate child. If I had the care of your Emma, I should add a little salt to the water, in order to stimulate the skin and promote a free circulation of the blood. Passing to my third rule, I am very particular as to diet. I never allow my children to eat

any but plain, well-cooked, nourishing food, and that they take at regular hours. I never let them eat anything between meals."

"That is rather hard upon them, is it not? My children are always teasing for cakes and crackers, and I should not have a moment's peace if I denied them. But then, the little dears have such poor appetites. At the table they sometimes refuse to touch anything."

"Cut off the irregular supplies, and see if they do not come to the table hungry. Then, being careful as to the quality of their food, let them eat as much as they like."

"But my children are so fastidious that they will not touch plainly prepared food," said Mrs. H. "Emma would not eat one thing for her dinner yesterday but a piece of mince pie and an orange. The child was so feverish all through the night that I was really anxious about her."

"I do not wonder at the feverish symptoms," said Mrs. May. "I would not dare to run the risk of a late dinner of mince pie and orange, even for Ned there, who has never been ill in his life."

"It never seems to hurt Emma to eat anything," said Mrs. H. "But give me a few more of your rules. I am quite interested in hearing them."

"Exercise in the open air and plenty of it, I insist upon," said Mrs. May. "I am also very careful to have every part of the body sufficiently protected in cold weather. I am a great believer in flannel as a protection against disease. My children always wear flannel over the lungs, even in summer."

"Not next to the skin?"

"Yes. I could not feel safe about them, unless they were thus guarded in case of exposure."

"It might do to serve my boy in that way, but you have no idea what a sensitive little thing Emma is. I know she would rebel against flannel."

"I never allow my children to rebel against my decrees," said Mrs. May, firmly. "Surely it is the sense and judgement of the mother which ought to govern, rather than the whims of the child."

"And you really think I am partly to blame for Emma's pale cheeks!" said Mrs. Harrington.

"I really think you are educating her to delicate health. She was not born to it, for she was a strong, lively babe."

"But, my dear, does not attention to all these little things make a perfect slave of you? If I should try to carry out even the few rules you have given me, it would keep me in a worry half of my time, for I know I could never indoctrinate nurse."

"How can a mother better employ her time than in guarding the best interests of her children?" said Mrs. May. "It is a heaven-appointed task, which she cannot depute to another. Besides, viewing this matter in the most selfish light, I think it is really easier for the mother herself, to give good care and training to her children, laying in early life, the foundation for a robust and vigorous constitution."

"Well," said Mrs. Harrington, as she rose to depart, "I will try to profit by your precepts and example. I had no idea that you had reduced the pursuit of health to such a perfect system."

Mrs. May laughed, and said: "Go home my dear, and change your nursery. Try fresh air, sunlight, regular hours as to eating and sleeping, wholesome, proper diet, moderate exercise, and warm clothing, upon these pale little pets of yours, and see if you will not be amply repaid. Take the oversight of everything pertaining to their daily life yourself, and I doubt not that they will soon compare so favorably with my chubby rogues, that you will never again have cause to sigh when you pay us a morning call."—*Excelsior Magazine*.

MAN is nowhere found so true to his natural impulses as at home. Would you glance at his true character, drop into the domestic circle in an unwary moment. Trust him not while away from home, in the pursuits of business or pleasure, for mercenary or other considerations may induce him, for the time, to lift the frown from his countenance, and put on all the airs of ease and gentility; but seek him in the bosom of his family, and you will find him exercising his true spirit. Witness the strength of his conjugal ties—the power over all that he has and is—and his full character will appear before you, glowing in excellence, or shrinking into insignificance.—*New Eng. Postal Record*.

A LADY at Southampton, Long Island, it is said, has just completed the knitting of a stocking which her mother commenced before her marriage sixty years ago.

Useful Women.

[Written for the Press.]

In these degenerate days it is a very rare occurrence to find a useful woman. It certainly strikes me with a senso of the ludicrous to hear the complaints that are daily made; if Mrs. Smith runs into Mrs. Brown's house for a minute, she drops into a chair with a half-smothered sigh, and Mrs. Brown asks: What is the matter Mrs. Smith? and Mrs. S. answers. I am just tired to death, Mrs. B., I have so much to do that I do not have a moment to rest; and forthwith Mrs. B. commiserates Mrs. S., and so it is the world over.

Why is it that our women complain so much, in comparison with our great-grandmothers? Those of the present generation do absolutely nothing; they think that if they wash, scrub, bake and brew, make beds and clean house, that they are a very ill-used class; there is absolutely no sense in so many complaints. I do not dispute that there are many women who have burdens laid upon their weak shoulders that they are not able to bear; but those are very few. How absurd it is in wife to say to her husband (and he perhaps a poor working man) I certainly shall not do our washing, I cannot slave myself so. If Mrs. So and So can hire her's done, I shall do the same.

She does not think, and reason that Mrs. So and So is fully able to have her washing done, while she is not. She is a slave to others; as they do, so must she. Occasionally you will find a sickly, delicate woman, raised not to labor, who will, when need be, go even out into the fields, and do that which is man's, not woman's work; and when she does work she works with a will; and besides, keeps her house clean and tidy, and her person neat; and you never hear her complain, no, for she is a useful woman.

I do not say that I think women should do such work, but I do say, that she should do that which is right in her province to do, and not complain that she is "slaving herself to death." And strangely enough, it is oftener the strong, healthy woman who has been raised to do hard work, that thinks she is the most persecuted; while a more delicate one, who has not been accustomed to labor, generally works more and says less.

ERNEST NORTH.

BE CHEERFUL AT HOME.—Don't be afraid of a little fun at home, good people. Don't shut up your house lest the sun should fade your carpets; and your hearts, lest a hearty laugh should shake down some of the musty old cobwebs there. If you want to ruin your sons, let them think that all mirth and social enjoyment must be left on the threshold without, when they come home at night.

When once a home is regarded as only a place to eat, drink and sleep in, the work is begun that ends in gambling-houses and reckless degradation. Young people must have fun and relaxation somewhere; if they do not find it at their own hearthstone, it will be sought in other and less profitable places.

Therefore let the fire burn brightly at night, and make the home-nest delightful with all those little arts that parents so perfectly understand. Don't repress the buoyant spirits of your children; half an hour of merriment around the lamp and freelight of home, blots out the remembrance of many a care and annoyance during the day, and the best safeguard they can take with them into the world is the unseen influence of a bright little domestic sanctum.—*Ex.*

HOME CONVERSATION.—Children hunger perpetually for new ideas. They will learn with pleasure from the lips of parents, what they deem drudgery in books; and even if they have the misfortune to be deprived of many educational advantages, they will grow up intelligent, if they enjoy in childhood the privilege of listening daily to the conversation of intelligent people. We sometimes see parents who are the life of every company, enter dull, silent, and uninteresting at home among their children. If they have not mental activity and mental stories sufficient for both, let them first use what they have for their own households. A silent honso is a dull place for young people, a place from which they will escape if they can. How much useful information, on the other hand, is often given in family conversation, and what unconscious but excellent mental training in lively social argument? Cultivate to the utmost of all the graces of home conversation.

Young Folks' Column.

Gerty's Glove.

"Elle avait au bout de ses manches, Une paire de mains si blanches!"

Slips of a kid-skin deftly sewn,
A scent as through her garden blown,
The tender hue that clothes her dove—
All these, and this is Gerty's glove.

A glove, but lately doft, for look—
Were I but you in days to come,
Warm from her touch! What gave the glow?
And where's the mould that shaped it so?

It clasped the hand, so pure, so sleek,
Where Gerty rests a pensive cheek,
The hand that when the light wind stirs
Reproves those laughing locks of hers.

You fingers four, you little thumb!
Were I but you in days to come,
I'd clasp, and kiss, and keep her—go!
And tell her that I told you so.

A HINT FOR THE GIRLS.—A wood engraver being asked why he did not employ women, replied: "I have employed women very often, and I wish I could feel more encouraged. But the truth is, that when a young man comes to me and begins his work he feels that it is his life's business. He is to cut his fortune out of the little blocks before him. Wife, family, home, happiness, are all to be carved by his hand, and he settles steadily and earnestly to his labor, determines to master it, and with every excitement spurring him on. He cannot marry until he knows his trade. It is exactly the other way with the girl. She may be as poor as the boy, and as wholly dependent upon herself for a living, but she feels that she will probably marry by and by, and then she must give up wood engraving. So she goes on listlessly; she has no ambition to excel; she does not feel that her happiness depends on it. She will marry, and then her husband's wages will support her. She may not say so, but she thinks so, and it spoils her work."

THE LARGEST CLOCK IN THE WORLD.—The large clock at the English Parliament House is the largest one in the world. The four dials of this clock are 22 feet in diameter. Every half minute the point of the minute hand moves nearly 7 inches. The clock will go 8½ days, but it only strikes for 7½, thus indicating any neglect in winding it up. The mere winding up of the striking mechanism takes two hours. The pendulum is 15 feet long; the wheels are of cast iron; the hour bell is 8 feet high and 9 feet in diameter, weighing nearly 15 tons, and the hammer alone weighs more than 400 pounds. This clock strikes the quarter-hours, and by its strokes the short-hand reporters in the Parliament chambers regulate their labors. At every stroke a new reporter takes the place of the old one, while the first retires to write out the notes he has taken during the previous fifteen minutes.

USEFUL HINTS TO YOUNG WRITERS.—Bonquet is a French word; boquet is not. Hors de combat is a correct French expression; hors du combat is not.

Illy is not an English word. To say that a person is illy adapted to any employment is as incorrect as it would be to say that he is wellly adapted to it. Ill adapted is the proper expression.

Firstly is not an English word; first should be used. Secondly, thirdly, etc., are correct.

The use of the word most instead of almost is a vulgarism of New England origin. The *Atlantic Monthly* lately exhibited it in some verses.

Nouns ending in *ey* form their plural regularly by adding *s*; as key, keys; monkey, monkeys; journey, journeys; attorney, attorneys; money, moneys. Ignorance leads some persons to write attorneyes and monies instead of the correct spelling.

The word whisky has no *e* in it, and its plural is whiskies, not whikeys.

ABOUT THE PLUM PUDDING.—During the holidays a little son of a gentleman in this city wrote the following as a starter for his school "composition." The subject is supposed to have been too much for him—made him so hungry he was obliged to abandon it: "A plum puddin' biled in a bag is the noblest work of god, except two plum puddins, though two is seldom bigger one if it is a largo one made right, tho' how it could be spoiled if it is big ennf we are open to conviction."—*Virginia City Enterprise*.

DOMESTIC ECONOMY.

Hints to Poor Housekeepers.

The duties of housekeeping do not occupy all the time of women who keep from one to a half dozen servants. Almost every housekeeper tells about being driven with care. Many complain that servants are the pest of their lives, the curse of housekeeping.

In the face of all this it is safe to believe that a good mistress makes good servants, and to act upon that belief.

Those who fully understand how to systematize house-work, and to practice all the practical economies of time, strength and expense in each department, have very little trouble with help.

The irregularities of a household do more to spoil a good servant than anything else.

Late to breakfast, late to dinner, late to supper, each taking their own time, and straggling in to eat alone, requires many more steps; and taxes the patience of dining-room girls. For there is grumbling about bad coffee, cold toast and hard beefsteaks, when everything was palatable when first cooked.

Where such habits are permitted, the washing and ironing drag around all the week, keeping girls in the vapors and discouraged. It is all very well that you "hire a girl to do your work, no matter at what time of day it pleases you to have it done"—if you allow a family of six or eight to leave things topsy turvy, one or two girls cannot follow them to keep things in order, besides doing justice to the other duties of housekeeping.

A great trouble is that girls are compelled to be both mistress and maid through ignorance of their superior officers.

"Do you wish your clothes rubbed through two waters?"

"Do you use washing fluid, Ma'am?"

"Shall I use flour or sale starch for dresses?"

"What shall I get for breakfast?"—and all such questions requiring a positive and intelligent answer directing girls how things shall be done.

But many women answer "Do the washing as you have been accustomed to do it. Get what you please for breakfast, only let it be something good"—giving girls free sweep in the kitchen, to waste and cause twice the expense they should, if it happens to be their custom.

Some women call that housekeeping. One of Dickens' characters is a woman who has seasons of striking terror to the hearts of her household by putting on gloves and tying her head up in a rag, to storm around and give things a thorough going over and dusting up—ill temper being the invariable accompaniment of such bursts of industry.

That character is the representative type of quite a class of housekeepers. It would be far better if their industry did not come in streaks. If they would exercise a little of it every day, it would prove a benefit to themselves and those around them.

Kindness to servants and a disposition to help them along make things go smoothly.

Working people have hearts, and those who best appreciate that fact are the ones who make most friends among them.—*Pomeroy's Democrat.*

A GOOD WAY TO COOK MEAT.—Is to seal it in a vessel hermetically tight. Cooked thus a long time in its own juices, it is rendered very tender, and has a peculiar appetizing flavor. Take an earthen jar that will stand heat, with a tight fitting cover. If of beef is to be the dish for dinner cut in convenient pieces, lay them in the jar, rub each piece with salt and pepper and a little sugar, put in a little water; lay on a piece of thick buttered paper, and press down the cover. If you think it will allow any steam to escape, mix short or rye meal with water to a paste; press strips of this all round the edge of the cover. Bake in a moderate oven four or five hours according to tenderness of meat. Chickens or turkeys, are excellent cooked in this way. The toughest old hen can be rendered toothsome by this process.

TO PICKLE MEAT IN ONE DAY.—Get a tub nearly full of rain or river water and put two pieces of thin wood across it and put the beef on them, distant about an inch from the water. Heap as much salt as will stand on your beef and let it remain twenty-four hours; then take the meat off and boil it, and you will find it as salt as if it had been in pickle for six weeks, the water having drawn the salt completely through the beef.

Cleaning Soiled Marble Slabs.

Much annoyance is frequently experienced by the soiling of marble table tops or other marble objects, and a perfectly satisfactory method of removing such stains is a desideratum. It is said that if slacked lime be mixed with a strong solution of soap into a pasty mass and spread over the spot in question, and allowed to remain for twenty-four to thirty hours, then carefully washed off with soap and water, and finally with pure water, the stain will be almost entirely removed, especially if the application be repeated once or twice.

Another preparation consists in mixing an oxgall with a quarter of a pound of soap-boiler's lye, and an eighth of a pound of oil of turpentine, and adding enough pipe-clay earth to form a paste, which is then to be placed upon the marble for a time, and afterward scraped off, the application to be repeated until the marble is perfectly clean. It is quite possible that with all our endeavors a faint trace of the stains may be left; but it is said that this will be almost inappreciable. Should the spots be produced by oil, these are to be first treated with petroleum for the purpose of softening the hardened oil, and the above mentioned applications may be made subsequently.

Ink spots may be removed by first washing with pure water, and then with a weak solution of oxalic acid. Subsequent polishing, however, will be necessary, as the luster of the stone may become dimmed. This can be best secured by very finely powdered soft white marble, applied with a linen cloth first dipped in water and then into the powder. If the place be subsequently rubbed with a dry cloth the luster will be restored.—*Western Rural.*

CANARY BIRDS.—Hang the cage always where drafts do not strike the bird. Give healthy birds canary and rape seed, plenty of fresh water, cuttle fish bone, and clean gravel on the bottom of the cage often. Also, give the birds fresh water to bathe in every day. After they have bathed remove the dish, which should be shallow. Never have the room overheated. At night, when the fire has gone down, if it is very cold, throw a thin cloth over the cage. A little pepper occasionally regulates them. Do not give them cake or sugar. When moulting, feed them on rape seed slightly moistened. Hard boiled egg and cracker grated are excellent. Bad seed will kill birds. Cabbage and sweet apples are good for them, and now and then a fig. With moderate care the little songsters will repay your attention with sweet notes of joy.—*Western Rural.*

TO CLEAN LAMP CHIMNEYS.—When you wish to clean a lamp chimney hold a linen cloth against one end of the chimney and place the other end in your mouth, breathe in it until it is covered inside with moisture, push the cloth into the chimney with a smooth slender stick and rub it around until the moisture is absorbed, repeat the process and breathe over the outer surface also, rub this with a cloth until dry and you have a clean, bright chimney as the result. This method saves time, labor and patience, and gives a result highly satisfactory; soft newspaper will take the place of a linen cloth—do not use cotton cloth on any glass-ware.

SUBSTITUTE FOR BED BLANKETS.—Here is a hint for housekeepers, and a very important one. Merely covering up a bed with blankets and counterpanes will no more protect it from dampness or keep it dry than a pane of glass will keep out light. The atmospheric moisture will penetrate all woven fabrics. Hence the importance of keeping the beds in spare rooms regularly aired. Many a dear friend or welcome visitor has been sent to an untimely grave, or afflicted for life with disease by being put into a bed which had been permitted to stand unoccupied. Keep the spare beds, when not in use, free from all covering but a light spread.

PLAIN APPLE PUDDING.—Pare, quarter and core apples to fill a small dish rather more than half, and pour in water two inches deep. Make a crust of one pint of flour, one-half teaspoonful of salt, and baking powder enough to make it light. Add a level teaspoonful of lard, and flour enough to make a wet dough, and roll it out quickly, put over the pudding dish, and place on a hot stove. Cover tightly with a tin cover on which put a flat iron. The steam produced cooks the pudding quickly. Fifteen minutes will be found long enough. Serve hot with hard sauce made of butter and sugar.

WHY SOME ARE POOR.—Cream is allowed to mold and spoil. Silver spoons are used to scrape kettles. The scrubbing brush is left in the water. Nice-handled knives are thrown in hot water. Brooms are never hung up, and soon are spoiled. Dishcloths are thrown where mice can destroy them. Tubs and barrels are left in the sun to dry and fall apart. Clothes are left on the line to whip to pieces in the wind. Pie crust is left to sour instead of making a few tarts for tea. Dried fruit is not taken care of in season, and becomes wormy. Vegetables are thrown away that would warm for breakfast. The cork is left out of the molasses jug, and the flies take possession. Bits of meat are thrown out that would make hashed meat or hash. Coffee, tea, pepper and spices are left to stand open and lose their strength. Pork spoils for the want of salt, from floating on top of the brine, and because the brine wants scalding.—*Ex.*

POTASH VS. RATS.—A gentleman of large experience, and claiming to be as humane as the rest of us, communicates to the *Agriculturist* the fact that he rids his premises of rats by putting potash in their holes and runs. The poor wretches get it over their feet and fur, then they lick it, and don't like the taste of it; it burns them somewhat, and the more they see of it the less they like; and so they clear out almost as soon as the application is made. To get rid of mice, the same person uses tartar emetic, mingled with any favorite food; they take it, take sick, and take their leave.

A WINTER EVENING DESERT.—In the winter, when there has been a fall of light snow, the following makes a delightful dish for desert and refreshments during the long winter evening (when the stove is hot): Take of the thickest sweet cream you can get, one pint; to it add one teacup full of white or light sugar, beat well together, then add enough clean dry snow stirring well all the time, to make it the consistency of ice cream; add flavoring of lemon, vanilla, strawberry or raspberry syrup made for the purpose.

PUDDINGS AND PIES.—Dr. Hall says that puddings and pies are considered unhealthy, because, being eaten after we have made a full meal of other things, the stomach is oppressed by them, and, if the process is repeated, becomes eventually dyspeptic; that is, has not power to work up the food, because it has been "worked to death" already. It would be quite as philosophical to say, he asserts, that if a man has become very tired by plowing all day, and afterwards by chopping wood had "worked himself out," it was very unhealthy to chop wood.

Mechanical Hints.

A NEW METAL, an alloy of which the composition is only known to the discoverer, has been compounded. This metal is said to resemble gold in color, ductility, and malleability. It does not tarnish nor is it affected by dampness. From its lesser cost and superior qualities it is expected that it will to a great extent supersede brass.

TO MAKE A VARNISH THAT WILL IMITATE GROUND GLASS.—Mr. J. Garratt has favored us with the following:—To make a varnish to imitate ground glass dissolve 90 grains of sandarac and 20 grains of mastic in two ounces of washed methylated ether, and add, in small quantities, a sufficiency of benzine to make it dry, with a suitable grain—too little making the varnish too transparent, and excess making it crapy. The quantity of benzine required depends upon its quality—from an half ounce to an ounce and a half or even more; but the best results are got with a medium quality. It is important to use washed ether, free from spirit.—*British Journal of Photography.*

THE BRITTLENESS OF DRAWN WIRE may be obviated in a short time by subjecting it to a glowing heat or it loses this at the ordinary temperature within two to four months.—*Oesterreich. Zischr.*

IN ORDER to prevent the ebullition of boiling liquids a small fragment of sodium amalgam or of sodium tin, is added, when the solution is acid. The efficacy of these depends on the evolution of a small amount of hydrogen during the process.—*Dingler's Polytech. Journal.*

IMPURITIES IN GOLD.—Slight traces, even the 1-1900 of lead, antimony, bismuth or arsenic, render gold crystalline and brittle; these impurities may be removed by chlorine. Silver from ancient graves in the Island of Cyprus was found to be brittle in consequence of changes in its molecular condition in the course of centuries.—*Polytech. Central-Blatt.*



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Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]
SAN FRANCISCO, Thursday, March 21, 1872.

SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.

City Tanned Leather, #1	26 2/3	29
San Francisco Leather, #1	26 2/3	29
Country Leather, #1	25 2/3	28
French skins are firmer with an advance in some grades, heavy California skins are firm, with an upward tendency.		
Jodot, 8 Kil, per doz.	70 00	90 00
Jodot, 11 to 13 Kil, per doz.	70 00	90 00
Jodot, second choice, 11 to 13 Kil, per doz.	60 00	70 00
Lemoine, 16 to 18 Kil, per doz.	85 00	100 00
Levin, 12 and 13 Kil, per doz.	85 00	100 00
Cornellian, 16 Kil, per doz.	70 00	80 00
Cornellian, 12 to 14 Kil, per doz.	60 00	70 00
Ogerau Calif, per doz.	54 00	60 00
Simon, 18 Kil, per doz.	65 00	70 00
Simon, 20 Kil, per doz.	65 00	70 00
Simon, 24 Kil, per doz.	65 00	70 00
Robert Calif, 7 and 8 Kil, per doz.	55 00	60 00
French Kips, #1	1 10 1/2	1 30
California Kip, #1	65 00	70 00
French Sheep, all colors, per doz.	15 00	15 00
Eastern Calif for Backs, #1	1 15 00	1 25
Sheep Roans for Topping, all colors, per doz.	8 00	13 00
Sheep Roans for Linings, per doz.	5 50	10 50
California Russett Sheep Linings, per doz.	1 75	5 50
Best Jodot Cal Boot Legs, per pair	3 25	3 50
Good French Cal Boot Legs, per pair	4 50	5 00
French Cal Boot Legs, per pair	4 00	4 50
Harness Leather, #1	30 00	37 1/2
Fair Bridle Leather, per doz.	48 00	72 00
Skirting Leather, #1	3 10 1/2	37 1/2
Welt Leather, per doz.	30 00	50 00
Ruff Leather, #1	18 00	21 00
Wax Side Leather, #1	18 00	21 00

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., March 21.

FLOUR—We note a fair local demand with a fair inquiry for export. Sales reported embrace 6,000 bbls. Cal. extra, 5,000 do. Cal. superfine, and 2,000 Oregon extra. We quote prices as follows:

Superfine, \$4.50@5.25; extra, in sacks, of 196 lbs. \$5.75@6.25. Standard Oregon brands, extra, may be quoted at \$5.75@6.25.

WHEAT—The market is quiet but owing to light demand, prices have declined. Sales aggregate 15,000 sacks fair to choice at \$1.90 @2.00 per 100 lbs. Quotable at close at \$1.70 @2.00 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 6d. per cental.

BAILEY—Market quiet. Sales embrace 10,000 sacks ordinary coast to choice bay, at \$1.40@1.50, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.50@1.72 1/2 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.55 for yellow and \$1.60 for white per 100 lbs.

CORNMEAL—Is quotable at \$2.50@3.00 per 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.30 per 100 lbs.

RYE—According to quality is quotable at \$2.25 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Selling at \$25.00 per ton from the mill.

MIDDLINGS—For feed, are selling at \$30.00 per ton from mills.

OIL CAKE MEAL—Steady at \$35 from the mill.

HAY—Receipts have been fair, and prices at close are \$16.00@22.00 for fair to choice per ton.

HONEY—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$4 per doz.

POTATOES—Stock have been reduced during the past week. Range for best kinds is between 95@1.00, and 65@85 for common.

HOPS—The range is 50@65c.

HIDES—During past week 1,250 Cal. dry sold at 19@21 and 1,790 salted at 9@9 1/2c.

WOOL—Several small lots of spring clip are at hand, but business has not yet commenced. The indications are that clean will start at 40 @50.

TALLOW—Market firm at 8 1/2@9 1/4c. #1 b. SEEDS—Flax 3c.; Canary, 6@7 1/2c.; Alfalfa, 16@20c.; Mustard—California Brown, 3@6c.; Cal. White 3 1/2@4 1/2c. #1 b.

PROVISIONS—California Bacon 13@14c.; Oregon, 13 1/2@14. Eastern do. 12 1/2@13c.; for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14 1/2@15; Oregon, 15 1/2@16c.; California Sugar-cured Hams, 16 1/2@17c.; Oregon do. 17@18c.; Eastern do. 17@18c.; California Smoked Beef, 13 1/2@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.87 1/2@3.00; Small Butter \$2.50@2.75; large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.30@3.50; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$3.50@5.00 per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 15@25 for soft shell; Peanuts, 5@8c.; Pecan, 25c. #1 b.; Cal. Walnuts, 11@15 Hickory, 12c.; Brazil, 16c.; Chili Walnuts, 11c.; Italian Chestnuts 25@30c.; Eastern Chestnuts, 12@20c.; French Almonds, 22@25c.; Princess Almonds, 30@35c.; Cocoanuts, \$5.00@6.00 per 100.

FRESH MEAT—Market shows a decline since last report. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 11@12 1/2c. #1 b. do. 2d quality 9@10c. #1 b.; do. 3d do. 5@8c.

VEAL—Quotable at 8@12 1/2c.

MUTTON—7 1/2@8c. #1 b.

LAMB—Scarce at 12 1/2c.

PORK—Undressed grain-fed is quotable at 7 1/2@8c. dressed, grain-fed, 10 1/2@11 1/2c. per lb.

POULTRY—Live Turkeys, 20@22c. #1 b.; dressed, 22@25 per lb.; large Hens 8@8 1/2c. Roosters, \$8 00@8 1/2c. per dozen; Spring Chickens, \$9 00@10 00; Ducks, tame, \$11 00@12 00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50; Quail, \$1.75@2.00; English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in good supply; it may be quoted at 20@27 1/2c.; California firkin butter, 20@25c. Pickled, 20@25c. Eastern firkin, 20@25c. #1 b.

CHEESE—California, 16@18c. Eastern, 19c. per lb.

Eggs—California fresh, 29@30c. #1 doz.

LARD—California 12 1/2@13 1/2c.; Oregon in bbls. and kegs 12 1/2@13c.; Eastern in cases 14@15 1/2c.; do in tcs. 12 1/2@13c. per lb.

FRUIT.

Tah. Oranges, M. 20@25 do Bananas, #1 bunch 2 00@3 00 California do. 15 00@40 00 Apples, eating, bx 2 50@3 00 Limes, #1 M. 20 00 do cooking, bx 1 50@2 50 Ausim Lemons, M 40 00 do Pears, #1 box 1 50@2 50 Sicily do M. 8 @12 do Pineapples 7 00@9 00 Cal. do #1 \$18 00 do Strawberries 1 50

DRIED FRUIT.

Apples, #1 D. 6 @8c. Pitted, do #1 D. 20 @22 Raisins, #1 D. 10 @15 Black Figs, #1 D. 7 @9 White, do 15 @20

VEGETABLES.

Cabbage, #1 D. 2 @2 1/2c. Asparagus, #1 D. 11@15c. Rhubarb, #1 D. 8 @10 New Potatoes #1 D. 4 @4 1/2c. Green Peas, #1 D. 12@15 1/2c. Tomatoes, #1 D. 10@12c.

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head.

BAGS AND BAGGING—The market is firm for all kinds except Gunnies Burlap sacks 16 1/2@17; Flour sacks 10 1/2@10 3/4c. for qrs. and 16 1/2@16 3/4c. for hls. Standard Gunnies are nominal at 20c@21c.; Wool 75@80c.

BOOTS AND SHOES—We note an improved inquiry and an active spring business is expected in this branch of trade.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$15@16; do dressed \$25; Spruce \$17@18; Redwood \$16@30 for rough and dressed, and 12 for refuse. We quote

Laths at \$2.75@3.00; Shingles \$2.50 @2.75. Redwood Lumber Association's prices are as follows:

Merchantable worked rustic, 31 00 to 32 50 Refuse do do 20 00 to 21 50 Merchantable surfaced and rough clear 28 00 to 30 00 Refuse surfaced and rough 18 00 to 20 00 Merchantable beaded flooring 28 00 to 30 00 Refuse do do 18 00 to 20 00 Merchantable rough 15 00 to 16 00 Refuse do do 11 00 to 12 00 Fancy Pickets 22 50 to 25 00 Rough Pickets 15 00 to 16 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20 1/2c.; Gnatemala 18c. Java 26c.; Manilla, 19 1/2c.; Rio 19 1/2c.; Ground Coffee in cases 30c.; Chicory, 12 1/2c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c. #1 b.

FISH—We quote Pacific Dry Cod in bundles at 4 1/2c. @5 1/2c. and in cases at 9c.; Salmon in bbls. \$6.00@7.00, hf do, \$3.50@4.00; Case Salmon, \$2.00 per doz for 1@2-lb. cans respectively; Pickled Cod, \$4.50 in hf bbls and \$3 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$13; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7 1/2c. per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 per ream.

PAINTS—Red and White Lead at 8@12 1/2c.; Whitening, 2 1/2c.; Chalk 2c.; Paris White 3c.; Ochre 3@3 1/2c.; Venetian Red 3@5c.; Litharge 9@11c. #1 b.

RICE—Sales of China No. 1 at 8@8 1/2c. and No. 2 at 7@7 1/2c. #1 b.; Siam, quotable at 6 1/2@7 1/2c. in mats; Carolina Table, 10@11; Hawaiian, 8@8 1/2c. per lb.

SUGAR—We quote Cal. Cube at 12 1/2c.; Circle A Crushed, 12 1/2c. and Granulated 12c.; Yellow Coffee and Golden C. 10 1/2@11c.; Hawaiian 7 1/2@10 1/2c. as extremes #1 b.

SYRUP—Prices may be given as follows: 72 1/2c. in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@5 1/4; Carmel Island, in bulk, \$14; Fine Liverpool, \$22.50@23.00 per ton.

SOAP—The prices for local brands are 5@10c. and Castile, 12@13c. #1 b.

TEA—We quote Hyson at 60@75c.; Gnu-powder and Imperial, 95c@1.05; Young Hyson and Moyune, 90c@1.15; Foo Chow Oolong, 50@90c; Pouchong, 37 1/2@15c.; Souchong, 50 @75c.; Japan 40@75c. #1 b.

San Francisco Retail Market Rates.

THURSDAY NOON, March 21, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. #1	35 @ 45
Pickled, Cal. fr. #1	30 @ 35
do Oregon, #1	30 @ 35
Honey, #1	25 @ 30
Cheese, #1	25 @ 30
Eggs, per doz.	25 @ 30
Lard, #1	18 @ 20
Sugar, cr. #1	7 @ 10
Brown, do #1	9 @ 13
Beet, do #1	12 @ 15
Sugar, Map. #1	25 @ 30
Plums, dried, #1	15 @ 20
Peaches, dried, #1	20 @ 30
Wool Sacks, new	60 @ 70
Second-hand do	60 @ 70

PRODUCE, ETC.	
Flour, #1 bbl.	75 @ 80
Superfine, do	60 @ 65
Corn Meal, 100 lb. bbl.	40 @ 45
Wheat, #1 100 lbs.	40 @ 45
Oats, #1 100 lbs.	15 @ 20

FRUITS, VEGETABLES, ETC.	
Pine Apples, #1	50 @ 60
Bananas, #1 bunch	50 @ 60
Cal. Walnuts, #1	10 @ 15
Cranberries, #1	10 @ 15
Cranberries, #2	10 @ 15
Pears, table, #1	20 @ 25
Plums, #1	10 @ 15
Oranges, #1	10 @ 15
Lemons, #1	10 @ 15
Limes, per 100	20 @ 25
Figs, dried, #1	65 @ 75
Asparagus, wh. #1	15 @ 25
Artichokes, doz.	75 @ 100
Brussels sprouts, #1	10 @ 15
Beets, #1	25 @ 30
Potatoes, New #1	25 @ 30
Potatoes, sweet, #1	6 @ 8
Broccoli, #1	15 @ 20
Cauliflower, #1	15 @ 20
Cabbage, #1	10 @ 15
Carrots, #1	10 @ 15
Celery, #1	75 @ 100

POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, #1	80 @ 100
Turkeys, #1	100 @ 120
Ducks, wild, #1	10 @ 15
Tame, do #1	25 @ 30
Teal, #1	10 @ 15
Geese, wild, pair	10 @ 15
Tame, pair	25 @ 30
Hens, each	75 @ 100
Snipe, #1	10 @ 15
English, do #1	10 @ 15
Quails, #1	25 @ 30
Pigeons, dom. do	10 @ 15
Wild, do	20 @ 25
Hares, each	40 @ 50
Rabbits, tame, #1	15 @ 20
Wild, do #1	20 @ 25
Squirrel, #1	25 @ 30
Beef, #1	10 @ 15
Corned, #1	10 @ 15
Smoked, #1	15 @ 20
Pork, rib, etc., #1	10 @ 15
Chops, do #1	15 @ 20
Veal, #1	15 @ 20
Cutlet, do	15 @ 20
Mutton chops, #1	15 @ 20
Lamb, #1	15 @ 20
Tongues, beef, ea	15 @ 20
Tongues, pig, ea	15 @ 20
Bacon, Cal. #1	18 @ 20
Oregon, do	18 @ 20
Hams, Cal. #1	18 @ 20

* Per lb. † Per dozen. ‡ Per gallon.

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES
Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, March 21, 1872

IRON.—		
Scotch and English Pig Iron, #1 ton.	\$55 00	@ 60 00
White Pig, #1	45 00	@ 50 00
Refined Bar, good assortment, #1	05 00	@ 06 00
Boiler, No. 1 to 4	05 00	@ 06 00
Plate, No. 5 to 9	07 00	@ 08 00
Sheet, No. 10 to 13	05 00	@ 06 00
Sheet, No. 14 to 20	06 00	@ 07 00
Sheet, No. 21 to 27	06 00	@ 07 00
Horse Shoes	7 50	@ 8 00
Nail Rod	10	@ 11 00
Norway Iron	8	@ 9 00
Roller Iron	5	@ 6 00
Other Irons for Blacksmiths, Miners, etc.	5	@ 6 00

COPPER.

Sheathing, #1	24 @ 28
Sheathing, Yellow	24 @ 26
Sheathing, Old Yellow	11 @ 11 1/2
Composition Nails	24 @ 26
Composition Bolts	24 @ 26

TIN PLATES.

Plates, Charcoal, 1X box	12 00	@ 13 00
Plates, 1X Charcoal	10 00	@ 11 00
Roofing Plates	11 00	@ 12 00
Banca Tin, Slabs, #1	16	@ 17
Drill	16	@ 17
Plough Points	3 75	@ 4 00
Russia (for mould boards)	12 1/2	@ 13 00

QUICKSILVER.—#1 D. 85 @ 86 1/2

LEAD.—Pig, #1 D. 05 1/2 @ 06 1/2

PIPE.—#1 D. 08 @ 09

ZINC.—Sheets, #1 D. 10 @ 10 1/2

BORAX.—Refined, #1 D. 25 @ 30

BORAX.—Crude, #1 D. 5 @ 6

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A Drinking Fountain for Fowls.
Dr. Beers' Improvement in Dental Plates.
Shears for Cutting Grapes and Flowers.
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A New Sash Tightener.
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Kennedy's Screw Propeller.
Gustafson's Tree Box.
A Grate Bar that don't burn out.
A Machine for Packing Flour.
Nevin's Sand Cap for Hubs.
Westfall's Potato Digger.
A New Collar Stud and Neck Tie Holder.
A Combination Household Tool.
Bonney's Grain Lifter.
A New Wire and Picket Fence.
Self-Acting Churn Power.
A Machine to Roast Nuts.
A Gas Generator.
An Improvement on Thill Attachments.
Paine's Culinary Apparatus.
A Superior Cider and Wine Press.
A Self-Opening Gate.
A Plow on a New Principle.
Wait's Improved Hay Press.
A Vegetable Cutter.
An Improved Plow Clevis.

We invite parties who feel interested in any of the above named patents to call and examine samples or send for description. Also, various other valuable patents on hand for negotiation.

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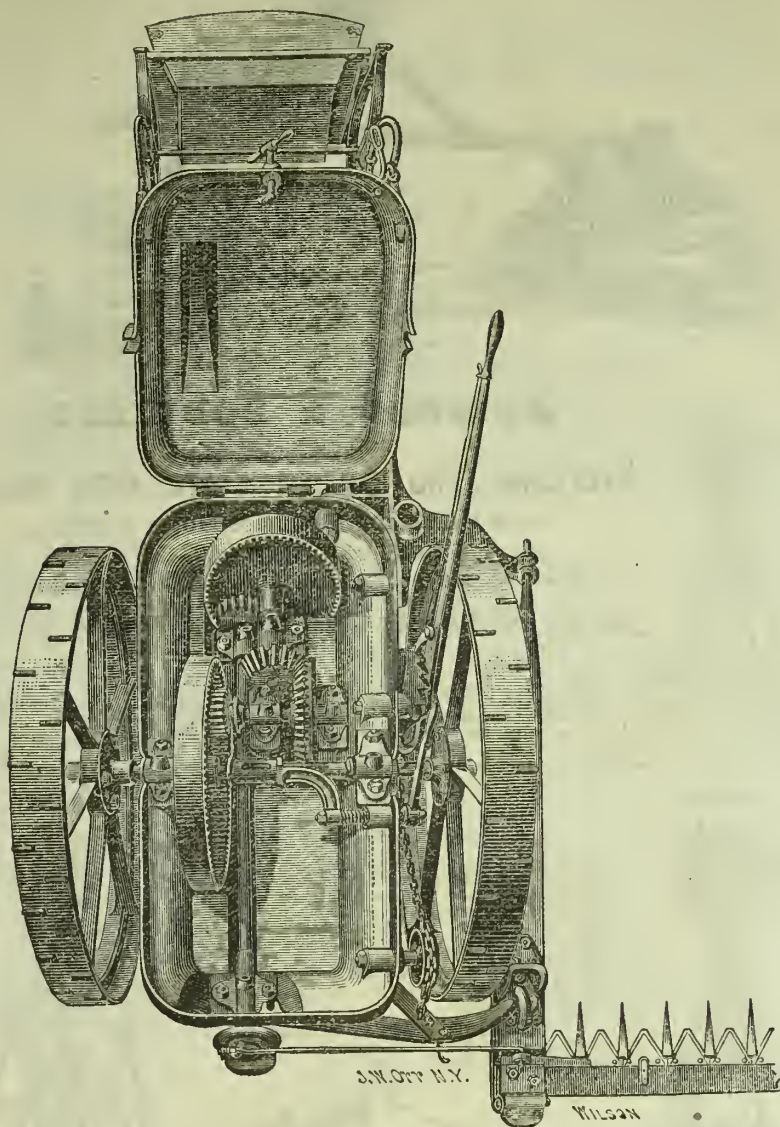
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All varieties of Fruit, from the earliest to the latest in cultivation. All warranted true to name.

Pieces to suit the times. Wholesale and retail.

Call and examine stock at Depot, J street, between Seventh and Eighth, next to P. H. Russell's grocery store. E. PARSONS,

3v4-3m

Nurseryman and Florist, Sacramento.

SHADE TREES! SHADE TREES!

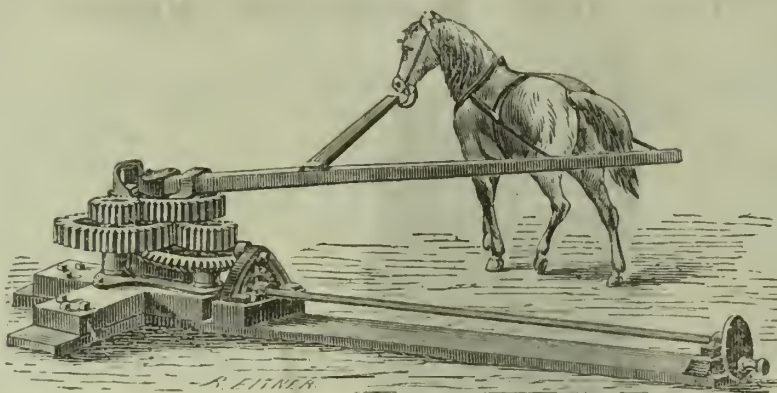
LOCUST, LOMBARDY, POPLAR, CIRCASSIAN and States Mulberry, California and States Black Walnut, Wild Cherry, Weeping Willow, etc., growing in my Nursery, 3 1/2 miles below Sacramento (Near Sutterville), and which I now offer to Planters and the Trade at prices to suit the times. Trees delivered to cars or steamers, or to any part of the city, without additional charge. Orders by mail or express promptly attended to.

2v3-3m

J. S. HARRISON, Sacramento.

Seeds, Fruits, Plants.

Our Descriptive Catalogues and Price-lists of GARDEN, FIELD, and FLOWER SEEDS, SMALL FRUITS, SEED POTATOES, etc., etc., ready in January, and mailed free to all on application. We know the value of pure and true Seeds and Plants, as we grow Fruits and Vegetables for market ourselves. D. H. BROWN & SONS, Cherry Lawn Farm, New Brunswick, N. J.



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MANUFACTURERS OF

EXCELSIOR AND GOLDEN STATE WIND MILLS,

Little Giant and Excelsior Horse Powers,

PUMPS AND WATER TANKS,

Nos. 211 and 213 Mission Street, SAN FRANCISCO.

We are the Largest Manufacturers of Pumping Machinery on the Pacific Coast.



N. B.—We have made the manufacture of Windmills a specialty the past ten years. During the last five years we have manufactured and put in operation a greater number of Mills than any other firm in the State; and we believe that in the last two or three years, more than any other two firms; which fact is the best proof in the world of the superiority of our machines. We GUARANTEE all our work, and we have NEVER FAILED TO FULFILL OUR GUARANTEE.

4v2-1am3m

EUREKA

AND

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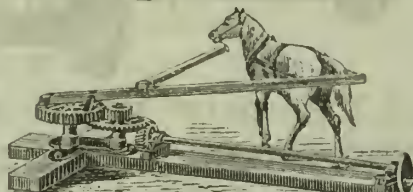
Patented November 23, 1869.

These Mills have stood the test and received the First Premium at the Mechanics' Fair in this city, and we challenge the world to produce their equal in point of Beauty, Strength, Durability and Simplicity.

They are the most easily controlled, run with the lightest wind, and are the least liable to get out of order of any Mill yet before the public.

We use the best material, and our workmanship is superior to all other in the State. All of the above we guarantee.

ECLIPSE HORSE POWER.



Windmills of all sizes, Horsepowers and Tanks, by W. I. TUSTIN.

Pioneer Windmill Manufacturer, Corner Market and Beale streets.....SAN FRANCISCO. sc16-1am3m

All Lots examined before naming price to Purchasers.

Each Consignment offered for sale on its merit.

Having our own wool rooms, careful attention is given to the weighing by one of the firm.

The best Wool Sacks and Twine.



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ALL RIVETED.

HAYWARD'S

COPPER-RIVETED

HORSE COLLARS.

Warranted never to break or give way at the Rim.

Go and look at them at the nearest Harnessmaker's or General Store, or send for a Circular to

J. C. JOHNSON & CO.,

104 and 106 Front Street,SAN FRANCISCO,

Dealers in Harness, Saddlery and Leather Goods of Every Description.

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Farmers, Look to Your Interests.

GRASS, CLOVER AND FIELD SEEDS

On hand, in lots to suit, at lowest market rates. Genuine Alfalfa California grown, Red and White Clover, Timothy Seed (Oregon and Eastern grown), Genuine Norway Oats. Also, choice varieties Seed Potatoes, Peas, Beans, Cabbage, Onion and Melon Seeds. Address JOHN C. DALY, No. 25 Front street, Sacramento. P. O. Box, No. 519. 16v2-3m

SHAKER GARDEN SEEDS.

Put up by the Shakers at Union Village, Ohio.

Catalogues sent, post paid, to all applicants.

State whether you want WHOLESALE or RETAIL.

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Shaker Box, Lebanon, Ohio.

Orange Trees! Orange Trees!!

I now offer to Planters and Dealers a large and splendid stock of ORANGE, LEMON, LIME, and ENGLISH WALNUT TREES. Also, a limited amount of

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Seeds, Seed Wheat, Seed Barley, Seed Potatoes.

Also, ALFALFA, of California growth and of best quality. All at Lowest Prices.

All orders from a distance filled with dispatch, and Seeds warranted Pure and Fresh. 3v3-3m

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Elm street (between Telegraph Av. and Broadway sts.), Oakland.

Evergreen and Deciduous Trees, Shrubs, Roses, etc., 10,000 Eucalyptus (including Blue Gum), 30,000 Monterey Cypress, Pinus, Insignia, Lawson Cypress, Acacias in variety, Magnolia, Oleander, Orange and Lemon Trees, etc., etc., at Lowest Rates. Orders attended to. Address

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IMMENSE STOCK OF APPLE,

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Extraordinary Inducements to wholesale buyers.

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Floral Guide for 1872.

Containing seventy-two pages and Two Beautiful Colored Plates nicely illustrated, giving plain directions for the cultivation of nearly a THOUSAND VARIETIES of Flowers and Vegetables. Full bound with your name in gilt, post paid, 50 cts. Paper cover and one colored plate, 10 cts.

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Flowers! Flowers! Flowers!

DEPOT OF SACRAMENTO NURSERY, K street, Sacramento, next the International Hotel. As large and varied a lot of Plants, Shrubs, Evergreens, Shade Trees, Bulbs, etc., as can be found in the State. Camellias and Japonicas of all colors. Hanging-Baskets, etc. Satisfaction guaranteed. Send orders to ANTHONY GAFFANESCHI, Sacramento Nursery, Eighteenth and C sts., 6v3-2m Sacramento.

New York Seed Warehouse,

C. L. KELLOGG,

427 Sansome Street, near Clay,

SAN FRANCISCO, CAL.,

Importer and Dealer in

Garden, Field, Fruit, Flower

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Ramic Plants.

Pure Alfalfa, Mesquite Grass, Etc.

DUTCH BULBOUS ROOTS.

Imported Direct from the

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1857. SEEDS. 1872.

15 Years Established.

W. R. STRONG,

8 and 10 J street.....SACRAMENTO.

Garden, Flower, Field, Fruit, Tree and Shrub,

Grass and Clover Seeds,

Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

My annual catalogue is ready and will be forwarded on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramma Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

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ILLUSTRATED

SEED CATALOGUE

For 1872,

Contains 150 pages. The most extensive and complete Seed Catalogue published. Sent free to all applicants. SEEDS WARRANTED FRESH AND TO REACH THE PURCHASER.

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CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

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The old Pioneer Broom Factory—Established August '66, No. 82 J street, between Third and Fourth Sacramento. All kinds of

Wood and Willow Ware.

Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubbs and Pails. 16v2-3m

HILL'S PATENT
EUREKA GANG PLOW,



The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc. 16v23-tf

SALE OF

BLOODED STOCK.

The undersigned will sell at PUBLIC AUCTION, at his farm, three miles north of the city of Marysville, on

Tuesday, March 26, 1872,

Twenty Head of Well-Bred Horses,
Old and Young, and

EIGHT YOUNG DURHAM BULLS AND FOUR
DURHAM HEIFERS.

All the above Horses and Cattle have been bred by the undersigned with the greatest care. The undersigned has for years

Taken the Principal Premiums

At the State Fair on his cattle.

TERMS OF SALE—Coin upon ninety days time, with approved security, or cash at 5 per cent. discount on amount of bid.

G. N. SWEZY.

Marysville, March 1st, 1872.

mar16-2t

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England.

Also ten Rams, and thirteen Ewes and Lambs, Silurian Sheep.

Also five hundred Calves of the best milch stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats. ROBT BECK, Secretary State Agricultural Society, Sacramento. 5v3tf

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RETAIL DRUG HOUSE
OF THE PACIFIC COAST

JAMES G. STEELE & CO.,

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Import and sell directly from Eastern and Euro. Markets.

NO. 521 MONTGOMERY STREET,
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Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

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GRINDELLA LOTION,

For the Cure of Poison Oak.

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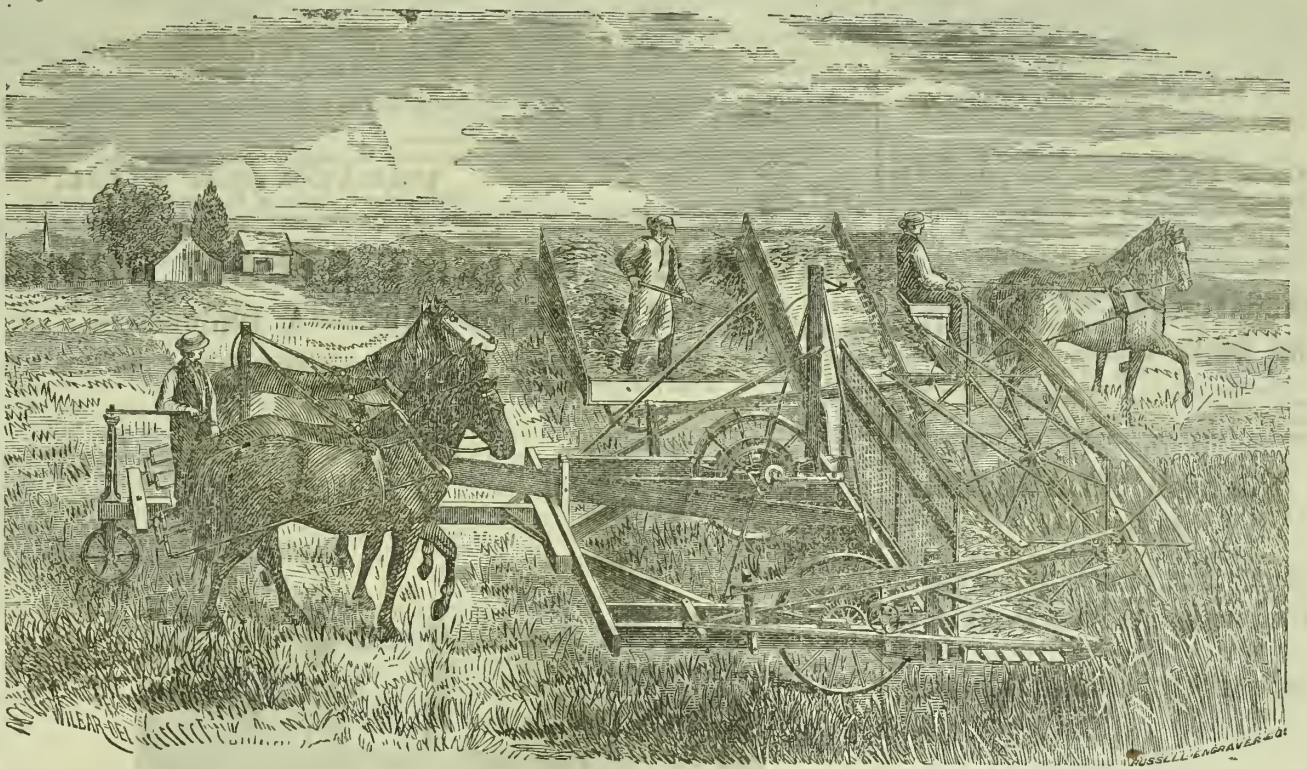
IN THE FIELD AGAIN!

TREADWELL & CO.,

WITH THE OLD STANDARD

HARVESTING MACHINES,

Hoadley's Portable Threshing Engines,



Russell's Threshers, Haines' Headers, Wood's Prize Mowers

Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

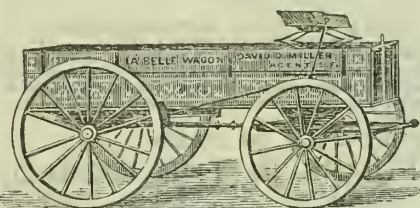
These Machines MUST BE SOLD, and the supply being limited, and prices at FIRST COST, they will be disposed of at an EARLY DAY. Farmers who intend to buy Harvesting Machines for this season, would do well to ORDER NOW, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. DON'T FAIL TO GET OUR PRICES BEFORE ORDERING.

TREADWELL & CO.,

OLD FARMERS' MACHINERY DEPOT, SAN FRANCISCO.

6v3-3m

FARM WAGONS.



JUST RECEIVED FROM

THE CELEBRATED ZUFELT & CO.,

Sheboygan Falls, Wis., established in 1850.

ALSO THE

CELEBRATED LA BELLE WAGON,

Manufactured by FARNSWORTH, WOODWARD & CO., At Fon du Lac, Wis.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate. Sold at from \$90 to \$125. Can be had only at

DAVID D. MILLER'S,

IMPORTER AND MANUFACTURER,

715 Market street, near Third,San Francisco.

Also on hand all kinds of Imported Wagons from the Eastern States, including Thorough-brace or Mountain Wagons, C Spring and Side Spring Buggies—in fact all kinds for the city and interior trade. Country orders promptly filled and warranted to give satisfaction, and at as low rates as though present in person. 7v3-tf

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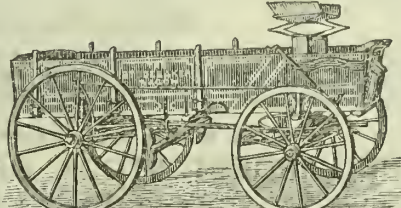
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Sporting and Defensive Firearms.

Sporting Goods and Gunsmiths' Stock of all kinds constantly on hand, Wholesale or Retail. 3v3-3m

STUDEBAKER WAGONS.



Have become

The Standard Wagons of the Pacific Coast.

FOR QUALITY,

DURABILITY,

LIGHT RUNNING,

GOOD PROPORTION,

AND EXCELLENT STYLE,

They Have no Peer.

IRON AXLE,

THIMBLE SKIFF,

HEADER AND

SPRING WAGONS,

Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed, As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

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Factory and Depot, 217 and 219 K street, SACRAMENTO.

WEBSTER'S PIONEER

Agricultural Warehouse,

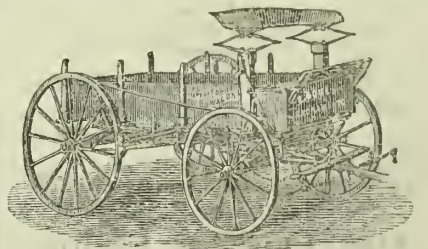
No. 201 and 203 El Dorado street,
STOCKTON,

Agency and General Depot for the San Joaquin Valley for the sale of the Celebrated STUDEBAKER WAGONS and all kinds of Standard Farming Implements. 4v3-3m

San Francisco Wire Works,

NO. 665 MISSION STREET,

Near Third Street.....San Francisco.
C. H. GRUENHAGEN & CO.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skiff at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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Corner Tenth and I streets,

ap22-3m

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MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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It is one of the Largest, best Illustrated and most Original and Enterprising Agricultural Journals in America, and has no rival on the western side of the Continent. Its circulation is Rapidly Increasing, and it is Very Popular with its Patrons.

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as it were, is required on the Pacific Coast, on account of its peculiar seasons, soil, climate and topography. The new discoveries, ideas, and useful hints evolved in its rapid progress, are to be observed with interest, and read, as reported in the PACIFIC RURAL, with profit by practical and progressive agriculturists everywhere. Sample copies of the PRESS, post paid, 10 cts. Subscription, \$4 a year.

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Turkish Muskmelon SEEDS.

For the first time in America, the Seeds of this valuable Melon, which keeps through the winter, are offered for sale. Small packages 50 cts., post paid from this office.

EGGS FOR HATCHING FROM THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums
At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
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HOUDANS, direct from France;
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SILVER SPANGLED HAMBURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
WHITE COCHINS,
BUFF COCHINS,
DUCK WINGED BANTAMS,
GOLDEN SEABRIGHT BANTAMS,
JAPANESE BANTAMS,
HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Thrushes, Fantails, and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager,
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OFFICE—No. 11 Leldesdorf street.
YARDS—Cor. Laguna and Washington streets,
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Fine Imported Poultry,

CONSISTING OF

Dark Brahmas,

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Houdans,

Guaranteed Pure, and bred direct from the finest Imported stock in America.

EGGS

Of the above varieties for sale carefully packed.
Poultry Yards at San Leandro, Alameda county, Cal.
Address
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W. FORD THOMAS,
Custom House, SAN FRANCISCO.

EGGS FOR HATCHING,

From My Finest Pure Bred and Imported Fowls.



PER DOZEN.
Light Brahmas, "Don Juan" and "Haiden".....\$12.00
Light Brahmas, bred from my Imported Stock... 6.00
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All Eggs ordered will be packed with great care, and Warranted True to Name, and Free h.
Cash Orders filled in rotation. Address
S. B. PIKE, Care Fireman's Fund Ins. Co.,
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BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco :

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed)

JAS. SPIERS,
WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the Mechanics' Institute, San Francisco :

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGEL, CHAS. R. STEIGER,
W. EPPESHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump, of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents.—See official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

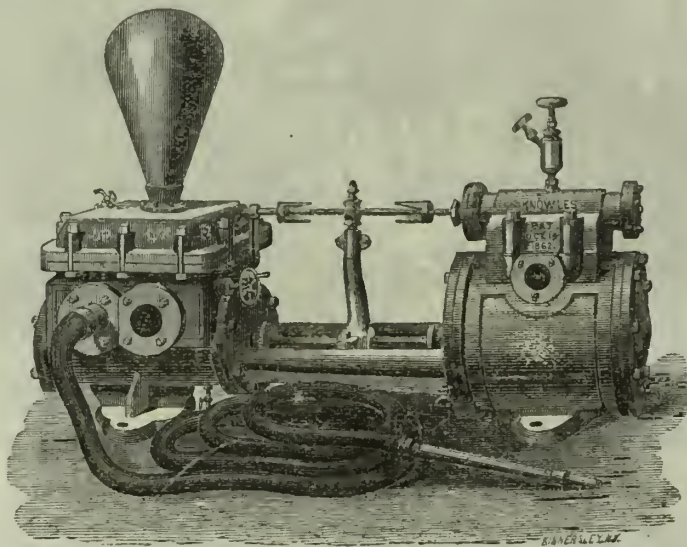
A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

TREADWELL & CO.,
Market street, corner of Fremont, SAN FRANCISCO.

KNOWLES' PATENT STEAM PUMP.

Received the Highest Award---A Diploma---

Over all Steam Pump Competitors, at Mechanics' Institute Fair of San Francisco, 1871; also Special Medal and Diploma at State Fair.



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

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CENTRAL PACIFIC R. R., OFFICE OF THE GEN'L MASTER MECHANIC, }
SACRAMENTO, Cal., April 14, 1871.

A. L. FISH, Esq., Agent of the Knowles' Steam Pump, San Francisco—Dear Sir: In reply to your inquiry as to the merits of the Knowles' Steam Pump, in use upon this road, I will say that we have nineteen of them in use on this road as fire engines, and pumping water for shop and station use. I consider the Knowles Steam Pump the best in use, and prefer it to any other. Yours truly, A. J. STEVENS, General Master Mechanic.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-cow-lyp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

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A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

TREADWELL & CO.,
Market Street, corner of Fremont, SAN FRANCISCO.

FRESH GARDEN SEEDS.

ALSO,

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Oats, raised on hill land, by one of the proprietors of this journal, can be had at this office.



Volume III.]

SAN FRANCISCO, SATURDAY, MARCH 30, 1872.

[Number 13.]

The Palm Tree.

Last week we gave an illustration of one of the many varieties of the palm, of tropical and semi-tropical climes, and suggested that they might be introduced successfully to California. And now comes a query from a "subscriber" as to whether we are not mistaken in ascribing to it, among its other good qualities that of its being a sugar yielding tree and oil at the same time, and seems to think that it take "a pretty good tree to do that."

Our correspondent must bear in mind that the palms take a wide range in the vegetable kingdom, producing a great variety of fruits, some of them yielding sugar, others oil, and yet others a variety of farinaceous substances and from nearly all of which, wine, and of course alcohol can be made. But to show "subscriber" by a very simple illustration that sugar and oil can be obtained from a single fruit that he has perhaps raised every year since he has been a farmer, we instance the watermelon, from which sugar is easily obtained whilst the seeds will yield 20 per cent. their weight of oil.

Within a few weeks a memorial has been presented to Congress by Mr. Louis Baker, praying that the necessary steps be taken to introduce into the Southern States certain palms yielding sugar and fruit. Many years ago, Dr. Perrine, of Florida, memorialized Congress, urging the importance of taking measures to initiate the cultivation of various tropical plants, of the success of which he felt assured by the results of his own experiments. The untimely death of the doctor, not long after, prevented any further action in this matter, though it is not unlikely that, had he lived, Florida and other Southern States would be enjoying a variety of important vegetable products not now included in their industrial resources. Mr. Baker thinks the palms especially important, particularly those furnishing sugar and oil in large quantities. He presents statements showing the ease with which such trees can be planted and kept up, and the vast returns obtained with very little expenditure of labor. Other species of palm considered by him important, are the date-palm, the coconut, the sago, etc. He also urges the planting of indigo, ginger, gunny, safflower, the centennial hemp-plant of China, the camphor tree, etc.

Steam Plows vs. Horse Plows.

The Vienna *Ldw. Ztg.* contains an official report of some experiments with steam cultivation made in 1870 to 1871, in Altenburg, on lands belonging to the Grand Duke Albrecht of Austria. A field was selected and divided into sections of from 6 to 30 acres in such a manner as to make the comparative trials as fair as possible. Some of these sections were plowed with the aid of horses in the common manner, while on others steam plows were used. The land was plowed at the end of June, 1870, and then left untouched until the spring of 1871, when it was planted with beets. The following is the yield per acre of the sections plowed.

With Horse Plows	10 to 12 inches deep.....	12,683.5 lbs.
With Steam Plows	12 " " " " " " " " " " " "	15,736.4 "
With Steam Plows	17 " " " " " " " " " " " "	22,354.5 "
With Steam Cultivators	10 to 12 " " " " " " " " " " " "	15,400.5 "

Showing an increased yield in favor of steam cultivation of 40, 76 and 24 per cent. respectively.

"The experimental sections were chosen adjoining one another in such a way that difference in the soil could have had no great influence on the increased yield, but only the more perfect work obtained by steam cultivation."

Rose Flowered Aster.

This week we give an illustration of one of the finest varieties of that everywhere popular class of flowering plants, the Aster. This variety, the Rose flowered, is placed by many florists, at the head of the list, of this class of beautiful flowers. It is a profuse bloomer with large flowers, double to the center and perfectly imbricated; colors white, rose, crimson, violet and blue, intimately blended. It is a German variety and particularly admired for its exquisite symmetry of form, whilst its great profusion of flowers is such as to almost entirely hide its foliage from view.

It requires a rich soil and thrives best in a hot climate and dry atmosphere, and thus particu-



ROSE FLOWERED ASTER.

larly adapted to California, away from the direct ocean winds, but will do well in any locality where ordinary garden flowers will flourish. They are easily started, either in hot houses or in beds in the open garden; bear transplanting for borders or grouping without injury. There are other varieties that are more dwarfed in their habit of growth, seldom more than 6 or 8 inches in height. Were we to give a preference to a few of the finer varieties, we would name, the Rose flowered, French peony, Snowy white, Victoria and Dwarf Chrysanthemum. E. E. Moore, seedsman of this city—whose advertisement can be referred to, and who furnishes us with the illustration—can also be interviewed in regard to the merit, as also the seeds of these everywhere hardy and beautiful flowers.

A HARDY VARIETY OF OATS IN TEXAS.—Mr. Geo. A. Smith, Belmont, Bell county, Texas, says: We have a valuable oat here—the pea or rustless oat—that always succeeds and yields from 30 to 100 bushels to the acre; a great acquisition to the South, where the crop so often fails from rust.

Esparto Grass.

We find from the report of the department of Agriculture for Feb., 1872, that considerable attention is now being paid in Europe and Algiers to the cultivation of a fibrous plant, which is called *alfa* in Africa, *atocha* in Spain, but in commerce is usually known as the *esparto grass* (*Macrochloa tenacissima*.) This plant thrives throughout the entire coast of the Mediterranean, both in Europe and Africa, and its cultivation is extending very rapidly, in consequence of the demand for it as a material for paper-making. It grows in very sterile regions, even in the sands of the Sahara, and thrives under excessive heat and in a dry, arid soil. It is peculiarly valuable on account of its great

Substitution.

We have a correspondent at San Diego City who says: "That in seeding wheat, in the absence of a drill, it is found that grain dropped in every second furrow will do almost or quite as well as if put in by the best drills." We must put in a word of comment here; for it is usual with a drill to seed in rows 6 to 8 inches apart. Now how he expects to seed in every second furrow, where the plow cuts a foot wide and get his rows or drills nearer than 2 feet apart, we don't see; and besides this it would take a regiment of seed sowers to follow 15 or 20 plows, to drop the seed in the alternate furrows. It is simply impracticable—on a large scale.

Again he says: "In levelling the ground where a good roller is not at hand, a triangle made of round poles or sticks 4 to 5 inches in diameter, put together with half inch bolts through each corner, with braces across the corners, breaks the clods as well as a roller, and leaves the ground in much better condition than a harrow." Again we would remark, that if his implement is a triangle and bolted at the corners, it needs no further bracing; a triangle braces itself, and cannot be racked out of position unless some part breaks. Besides this, a roller and a harrow, or triangle of logs, as he suggests, are for a very different purpose, and one cannot do the work of the other.

He remarks further, that many are planting fruit trees and vines, with the view of a future export of raisins, figs, nuts, etc., and concludes by saying: "It would be difficult to find better table fruit than the 'Mission' grapes, grown at the Cajon Rancho." We are afraid our correspondent is not fully posted in matters of which he speaks.

Wool is King This Year.

Though wool seems destined to rule at a higher figure in the markets for a year or two at least, than it has for a long time past, and mutton to maintain its full proportional value with other meats, and sheep consequently commanding higher prices, yet we would say to those who may feel like investing in this stock, to the abandonment or exclusion of such other animals as have received their more special attention, not to go to work too earnestly in that direction. Don't sell off your fine stock of hogs at a sacrifice, to raise money to invest in sheep, expecting thereby to reap a sudden fortune. It would be more than likely that before your fortune is realized from the change, that hogs or pork will be king in the place of wool.

All cannot go into the same business of stock raising on a large scale, with the same one kind of animal, without almost immediately overdoing the thing. It is this constant inclination to change, from one to the other kind of animal or grain, that for the time seems to promise better returns than another, that every year brings it disappointments to many. The surest course is, a diversity of crops and the rearing of the different farm-animals in due proportion, such as the soil and climate and the farmer's experience and judgment point out as best suited to his purposes. Then let him persistently pursue a course of industry and endeavor at improvement in all that he does, and certain success awaits him.

THE drainage of wet lands adds to their value by making them produce more and better crops, by producing them earlier, thus giving more time to mature.

A PACKAGE of seeds or plants, weighing not over four pounds, can be sent by mail to any part of the country at the rate of eight cents a pound.

CORRESPONDENCE.

Letter from Napa County.

EDITORS PRESS:—You invite us to write for our paper; so here goes for my first: Well, in the first place, I want to show my appreciation of the PACIFIC RURAL PRESS; I think it is the best paper of the kind, published. I have been a resident of this State for twenty years, and since farming has been my occupation nearly all that time, have often felt the need of just such a paper. I take several Eastern rural papers, but the PRESS is worth more than all of them combined to residents of this coast.

Experiment with Blue Grass.

In your issue of Feb. 17th, in answer to "Enquirer," you say you are not aware of any experiments having been made in the cultivation of Kentucky blue grass. I sowed some on my ranch in Del Norte Co., in 1858. It did not give satisfaction, and was discarded. It grew well in my garden where the soil had been manured, but on my meadow lands it formed a tough sod but would not bear pasturing, producing very little feed.

Other Grasses.

I found Orchard grass a very superior grass for pasture, and as for Timothy, I never saw a place to equal it; I had a 13 acre field that averaged 5 tons per acre, the best acre producing 7 tons. The locality I have reference to is in Elk Valley, about 4 miles from the ocean, with plenty of fog and dews to keep up almost a continual moisture. The soil is a black clayey loam with a very close clay subsoil, 18 inches from the surface.

Fruit.

The apple is equal to Oregon's best, on the best and driest of these soils. The cherry does well, but sometimes cracks badly. Plums and some varieties of pears do well; and as for currants, raspberries, and strawberries, I do not think this Valley can be excelled; and such a profusion of wild berries, comprising the Salmon berry, Thimble berry, Blue Huckle berry, High Bush Huckle berry—the first blue, the latter black—also a high and low bush Red Huckle berry; also wild strawberries, Salad and Service berries.

The country about Crescent City (the county seat) is well timbered and watered. Two sawmills have recently been built there for the purpose of exporting to the San Francisco market. Its drawbacks are its remoteness from market, having a poor harbor, or in fact none at all, being an open roadstead, not being safe for vessels more than 5 or 6 months in the year. The Humboldt steamer touches there twice a month during the summer season. I should have mentioned that the farming country about here is very limited, not much more than enough to supply the home demand. Several hundred tons of chromic iron ore was shipped from there the past two summers. Rich copper mines exist 18 miles from Crescent City, but are not being worked at present. Timber is the main resource of the county.

St. Helena, Napa Co., March 18.

The Garden Seed Business.

EDS. PRESS.—My attention has been called to an article in a recent issue of the PRESS, on the subject of California garden seeds. Thinking my experience in that branch of industry might be of service to you, I send the following: There is probably no part of the United States so well adapted to the raising of seeds as this State; every variety can be grown here to perfection, particularly in this locality. Some seeds will not perfect themselves in one part as well as in other parts of the State. Onion seed will not perfect itself about the Bay of San Francisco, it always blights, and will not mature, because of the damp atmosphere and cool weather. I tried it there for three years and gave it up. Here on Sherman Island it ripens to perfection; the finest seed I ever saw was grown by me last year, and the onions grown upon this Island, took the first premium at the State Fair last year. I could raise all the seed that the East would want, but whilst they charge us two to four dollars per pound, they want us to furnish seed to them for fifty cents a pound; now that price wont pay, though a large amount of seed is put into the

market by Chinamen at that figure, and dealers will not give me any more; that is one drawback in the business.

Responsibility of Seed-Growers.

Now we come to the point; how much of the California seed that is thrown upon the market, is good? not one-third, and why? the reason is plain; the raising of seeds for the market is a legitimate business of itself, it is a trade just as much as that of the mechanic. A good seed-grower can do all the business that he pleases, and do it well; but the seed sold by outside parties will kill his business. Dealers buy in good faith of farmers, upon their statement that the seed is pure and good, yet they prove bad, and will, so long as farmers let their poorer vegetables go to seed, and sell them for the money; and yet the legitimate seed-dealers buy of these men, and this kills the regular seed-grower. D. L. P.

Emmaton, March 11, 1872.

Rose's Adjustable Plow.

EDITORS PRESS:—I take it for granted you mean what you say—"Farmers write for your paper," and as I have one thing of great importance to communicate to viniculturists and horticulturists, I will now free my mind. Having been fortunate enough to get one of M. P. Rose's adjustable vineyard plows, and find it of such great utility, that I cannot refrain from calling the attention of all horticulturists to this valuable invention for our especial benefit. * * * * J. D. B.

Who Can Beat It?

A friend of ours, (we would give his name but we don't like to see it in print) budded a peach tree in November last, and it is now in bloom. If any one can beat this, we would like to hear from them. St. Helena is certainly one of the finest fruit districts in the State.—E.C.

Any One can Equal It.

In budding peach trees in autumn care should always be had, in the selection of buds. Almost any nurseryman knows well a blossom bud from a wood bud, and he never inserts a blossom bud for the production of wood. The wood bud is generally single, and quite pointed or sharp at the end, whilst blossom buds may be single or double, or treble, but always round and plump and not sharp at the end like the others, and if these are inserted they must produce blossoms and nothing else, and sometimes the fruit is fully perfected.

BEEF SUGAR IN MASSACHUSETTS.—The Amherst Agricultural College, after full test by experiments, has inaugurated a company to erect a beet-sugar mill promising an annual dividend of twenty-five per cent., besides ample reserved profits for future additions and renewals. Though Franco and Germany do not agree in all things, they agree on the great profits of beet sugar. New sugar mills are multiplying with unexampled speed in every department, from the extreme north to the southern borders. In Switzerland, melons are cultivated for sugar. If in such climates beet sugar pays, why should anybody hesitate in California? If report be true, the refined sugar costs the producer seven and one-half cents per pound, and brings him in eleven and one-half cents gross, or four cents net. At that rate, a mill producing four tons per day—and that amount is made from fifty tons of beets—nets \$50,000 a year, for six working months. The capital required to put such a mill in operation does not exceed \$150,000.—Alta.

AMPUTATION OF THE LEG OF A HEIFER.—Mr. J. Barton Buckland, Dover, Eng., has favored us with a short description of a case of a heifer, in which he successfully amputated one of the fore limbs. The animal, which was the property of Mr. Sanford, of Merton, met with an accident, by which a compound fracture of a most serious kind, was caused. The limb had to be amputated above the knee joint. The case went on well, the heifer being soon enabled to lie down and to rise with a facility almost equal to any other animal. About five months afterwards she had gained so much flesh and was in such good condition as to enable her owner to sell her with advantage to a butcher.—Veterinarian.

HORTICULTURAL.

The China Tree and Holly.

EDS. PRESS:—In your issue of March 16th, you mention the receipt from Louisiana of seeds of two kinds of ornamental trees which are general favorites throughout the Gulf States—the species of holly which is a native of the Southern and Eastern States; and the China tree introduced from abroad.

You also kindly offer to distribute their seeds among your subscribers. A few facts concerning them may not be without interest to your readers. Two other common names of the China tree, in different localities, are Pride of India, and Bead tree. Its botanical name is *Melia Azedarach*. There are three species of *Melia* described by botanists. The one so common in the Southern States is a native of Syria, and is, as you mention, deciduous. Why it received its common name of China tree, we do not know, unless it arose from a wrong impression as to its native country just as we know that the turkey received its name from a similar error. A second species is a native of the West Indies; a third, of the East Indies, and both of the latter are evergreens. The flowers of the first two are blue or lilac, while those of the third are white. The flowers of our familiar species are very fragrant, their odor reminding one of pinks or jossamines.

Your mentioning that the wood of the China tree makes a beautiful veneering, calls to mind the fact that it and the celebrated Mahogany tree of the West Indies, Southern Florida, and Central America, are very closely related, as they belong to the same botanical family.

Their flowers are similar in form—those of the mahogany being some white, others red.

The *Lignum vitae* tree, so justly noted for its wonderfully tough, durable and heavy wood, and for producing the peculiar resin sold by druggists as a medicine under the name of *Gudiac*, or *Gumiacum*, the botanical name of the tree, is also closely allied to the China tree and mahogany. It too is a native of the West Indies, grows to a height of 40 feet, and produces blue flowers and roundish berries like the China tree. We may mention the fact, in passing, that the mahogany tree grows higher than its two relatives, frequently reaching a height of 80 feet. It also produces a larger fruit which is described as "about the size of a turkey's egg."

The Mahogany and *Lignum Vitae* are both evergreens.

The China Tree

Is not only a favorite shade tree in most of the Southern States, but is extensively cultivated for the same purpose in the Bermuda islands, and elsewhere in climates sufficiently warm. Under favorable circumstances, it attains a height of 40 feet. A distinguished English botanist in speaking of it, says: "*Melia Azedarach* grows to a large tree in the south of Spain and Italy, producing long loose bunches of blue flowers, succeeded by pale yellow berries, about the size of a cherry. These berries consist of a pulp, which is poisonous in a high degree, and mixed with grease, will kill dogs, enclosing a nut which is bored and strung as beads by the Catholics." It is from the latter fact that the common name of Bead tree is derived. These China berries, when green, rival dog-wood berries, as a favorite ammunition with the boys for pop guns. When ripe, they are frequently eaten by children, but are considered very unhealthy, if not actually poisonous. They are produced in great quantities, and so cover the ground, when they ripen and fall, as to form the chief objection to the cultivation of the tree, on account of the litter they produce.

Some birds are very fond of the ripe berries of the China tree, robins especially. They are made as drunk by a free use of them as wild geese are said to be from eating grain soaked in whisky. They frequently indulge to such an extent in their favorite stimulant, as to reel and fall helpless from the tree, an easy prey to any watchful boy, or other enemy they may have. Many a robin, boys, has come to an untimely end by getting on just one

such spree. Let us take warning from their examples. As a medicine, a tea made from China root has the reputation of being an unfailing vermifuge. The China tree has already been introduced into parts of San Joaquin Valley, and is found to flourish as well here as in its native soil. And why should it not, when we recollect how similar are the surface and climate of Syria and California?

The Holly.

With regard to the holly, the following facts given by Loudon, in his Encyclopaedia of Plants, may be of use to those who wish to raise that beautiful evergreen from the seed, as you propose. "In cultivating the holly, the kernel or stone of the berries is divested of its skin and glutinous pulp by mixing with sand in heaps in the open garden, and turning over frequently. The berries being gathered in November, may be rotted in this way till the October following, and then sown in beds, and covered three-quarters of an inch with fine mould; or they may remain on the trees till spring, then be gathered and mashed in a tub of water to separate the pulp, after which they may be sown. In general, the stones do not vegetate till the second year from the gathering; some will occasionally germinate the first year, and a number not till the third."

Loudon has special reference to the British species of holly, *Ilex Aquifolium*; but no doubt his remarks will apply equally to the southern species, *Ilex opaca*, as the two are very similar in appearance and habits. Holly is so tough, hardy and long-lived that it makes an excellent shrub for hedges, to say nothing of its beauty as an ornamental tree. J. W. A. W.

Turlock, March 18, 1872.

Forest-Trees from Cuttings.

There are a few species of forest-trees that may be propagated more readily from cuttings than from seed. The willows and poplars are well-known instances of this kind, their seeds being extremely small and delicate, and require careful handling to make them grow, while the cuttings of the branches will seldom fail, even with very ordinary care. There are other advantages to be derived from the use of cuttings, the principal one being the saving of time; for if good care is given, a cutting will make a more rapid growth than the seed, and with the willow and some of the species of poplar, like the Lombardy and Cotton-wood, the cuttings may be six to ten feet long on the start, and quite a handsome tree can be produced the first season.

In planting such large cuttings, they should be set deep enough to stand firm in the soil, and unless the situation is a moist one, the entire surface of the cutting-bed should be covered with coarse straw or some similar kind of mulching. The Button-wood (*Platanus*), both native and foreign species, grow quite freely from cuttings of the one or two-year-old wood. In low, wet ground, long cuttings will succeed, but in ordinary garden-soil the cuttings should not be more than a foot long, and these will succeed better if made in the fall and healed in until spring. Silver and Red Maple will also grow from cuttings made of the one-year-old wood, with two or three inches of the two-year-old left on the base. There are many other kinds of trees, such as mulberries, negundo, ailanthus, salisburia, that can be multiplied in this manner, if necessary or desirable.

GET GOOD TREES, VINES, AND PLANTS.—It never pays a farmer to plant out poor, cheap, unthrifty trees; and it never pays a farmer or gardener to depend on growing grape vines or flowering plants from slips or suckers. The farmer wants good trees, good fruit, good grapes, good flowering plants, and he should supply himself with trees for his orchard, his vines, and shrubs, from healthy stocks, and from sources—nurseries of established character—where no disappointment is likely to follow. We pay five dollars for a hat, fifteen dollars or more for a coat, and for our tobacco and cigars a good sum, and so on—articles, perhaps, not always necessary, and soon despoiled of their beauty—when the amount laid out in fruit trees or shrubs, would be a joy for long years to come.

TULIP TREE IN ENGLAND.—James Vick says that during his recent tour through the south of England, in visiting a park which contained many interesting and remarkable trees, one in full bloom attracted the special attention of his English friends. This was the tulip tree, and he adds: "I took no small pleasure in informing them that this was a common forest tree in America."

MECHANICAL PROGRESS.

Metal for Bearings.

The following alloy has been found to give highly satisfactory results for plunger blocks, axles, brasses, etc. To 30 parts of melted copper are added 70 parts of antimony; the mixture is melted and run out into thin plates. These are then re-melted with tin in the proportion of 90 parts of tin to 10 parts of the copper and antimony, and run out again into thin plates. When used it is re-melted, and run into the form required. M. Volk, of Regensburg, has employed an alloy for many years, of which the following are the component parts: Copper, 5.6 per cent.; antimony, 11.2 per cent.; and tin, 83.2 per cent. He also employs the following mixtures to produce metals for various purposes.

For slide valves:	
Copper.....	81.9 per cent.
Tin.....	14.8 "
Zinc.....	3.3 "
	100.0
or	
Copper.....	67.0 "
Old brass tubes.....	32.0 "
Tin.....	10.2 "
For pump barrels, stop-cocks, and valve-boxes:	
Copper.....	87.1 "
Zinc.....	10.7 "
Tin.....	1.6 "
For stuffing-boxes, valves, etc.:	
Copper.....	86.2 "
Zinc.....	3.6 "
Tin.....	10.3 "
For eccentric rings:	
Copper.....	90 "
Zinc.....	10 "
For piston rings:	
Brass cuttings.....	94 "
Copper cuttings.....	6 "

PNEUMATIC DESPATCH TUBES.—At the meeting of the (English) Institute of Civil Engineers, C. Siemens read a paper on this subject, which is published in *The Engineer*. The first system mentioned was laid in London and consisted of a tube through which carriers, containing messages, were forced in one direction by compressed air, and in the other by means of an exhausted receiver. This has a limited power of dispatch as one carrier must complete its passage in one direction before another could be sent in the other direction, and it did not admit of intermediate stations.

In 1863, Messrs. Siemens & Halske introduced their system at Berlin. This consisted of two $2\frac{1}{2}$ inch tubes, forming a circuit. Through these flowed a continuous air current, of course passing in one direction in one tube and in the opposite direction in the other. Carriers could be put into the tubes at any point. The continuous air current was produced by means of a steam engine working a double-acting air pump. In Paris there was also a circular system, but without a continuous air current, the carriers being driven from one station to another by air compressed by means of water from the city mains. This was very limited in capacity and required a large expenditure of water. In London there was a large cast-iron tube of a π section for carrying parcels. Here, in 1870, the Siemens Brothers introduced their circuit system with continuous air current, and this has been found to work well and has since been extended. As above, carriers can be sent or received at any point. As to the speed of the carrier it was found that it traveled 4,116 yards, or over the whole circuit in 7 min. 45 sec. Instead of a steam engine and air pumps, the necessity of which was a hindrance to the general introduction of pneumatic tubes, a simple and cheap arrangement, something like the Giffard Injector, has been used with very good success for producing the continuous air current.

CASE-HARDENING.—It is often desirable to convert the surface of small iron articles into steel, to prevent wear and tear, and also to prepare them for a high polish. To do so is much quicker and cheaper than to make these articles in the first place out of steel. The older process consisted in placing them in an iron case with burnt bone dust or other charcoal, exposed for from two to eight hours to a dull red heat, and plunged into oil or cold water, which cooling is called "quenching." The process is varied at times by leaving its subjects to cool in the case, and afterwards tempering them. A later mode is to use prussiate of potash. This consists of two atoms of carbon and one of nitrogen to one of potash. Its decomposition leaves no solid residuum that can interfere with the chemical change or injure the quality of the steel. It is rubbed on the iron at a dull red heat; the metal is then put in the fire for a few minutes, and then tempered in water.

It was formerly customary to case-harden burglar-proof safes, the iron doors of banks, etc., so that they might resist the drills of thieves. Such articles are now made mostly from Franklin iron, which is manufactured from an ore found at Franklin, N. J., and nowhere else in the world. This iron is peculiarly hard, and is found to be about as effective as if case-hardened.

THE ST. LOUIS BRIDGE is progressing rapidly. The concrete or foundation of the last pier has been laid, the masonry is two-thirds completed and the superstructure is commenced. The cast-iron plates at the piers have been placed and prepared for the reception of the steel tubes forming the spaces. It will be completed in about a year from now.

Steelled Wheels.

This novel title is given to railway wheels made by a process which must rank among the great improvements recently made in the working of metals, by Mr. W. G. Hamilton, engineer, of the Ramapo Wheel and Foundry Co., which, after 4 years of experimental trials, is now brought prominently before the public.

Mr. Hamilton, who is well known to the railway profession, through his "Manual of Useful Information to Railway Men," has worked out the problem of making chilled car-wheels out of non-chilling irons, and at the same time increasing the strength of the mixture above that of the most expensive charcoal irons.

The process consists in part in melting scrap steel, with the ordinary charge of pig metal, in the cupola, by which an increase of strength of from 20 to 50 per cent. is given to the metal.

Messrs. A. Whitney & Sons, the extensive wheel founders of Philadelphia, have been testing the practical utility and value of the process, have made some 15,000 wheels, during a continuous working during the last 3 months, and report it a most complete success.

That this process will enable them, by adding to their usual chilling charcoal irons a portion of non-chilling soft charcoal irons, or anthracite metal, to produce a car wheel of greater strength, and at a much less cost, than with high-priced chilling charcoal irons alone.

To the railway community the value of this improvement will be understood, when it is known that the supply of charcoal irons is yearly diminishing and the cost increasing, and that the steelled metal gives greater security to their rolling stock.

CURVED LOCOMOTIVE SMOKE-STACK.—According to the Boston *Transcript* a Massachusetts invention has lately been tried on the Fitchburg railroad with good results. It consists of a curved smoke-stack, of nearly the shape of a "horn of plenty," attached as ordinary smoke-stacks are, the mouth running backward. Within, near the enlargement at the upper curve, is placed a wire screen at an angle of about 45° with the direction of the smoke, and the usual screen is placed over the immediate outlet. Just below the first screen a perforated steam pipe runs horizontally through the smoke-stack, and is connected with the boiler by a valve-pipe under the control of the engine-driver. As the refuse matter from the furnace passes through the stack, it is moistened by the fine spray ejected through the perforations, thus deadening the particles and increasing their weight. Striking against the inclined screen, they are deflected downwards and led through a proper tube below the engine, falling on the track in a moistened and consequently harmless state. The arrangement does not hinder the draft. Not only is the trouble of cinders upon the train obviated, but damage from fires along the track is also prevented.

BROAD AND NARROW GAUGE.—A writer in *Van Nostrand's Mag.* argues in favor of the broad (6 feet or more) over the narrow (4 7-10 feet) gauge for railroads, claiming a gain in all respects for the former. In regard to the present general use of the narrow gauge he says that it has been adopted "for reasons which would not be creditable to our railway managers and to the profession to state"—a statement which may be satisfactory to the author, but which the general public can hardly be expected to swallow. In his comparison, however, he gives figures to prove that the cost of building and running roads of broad gauge is less than for those of narrow gauge. His argument is by no means complete. In conclusion he says that it is now understood that several leading engineers in Europe, dissatisfied with the narrow gauge of 4 7-10 feet or 5 feet, are seriously considering the question of recommending the 6-foot gauge as the best uniform gauge for the entire of Northern Europe and Asia.

IRON CARS.—A model of a freight car is attracting considerable attention at St. Louis. It is cylindrical in form, and is constructed of iron. By the peculiarity of its form, pressure on the sides is avoided, and having a false floor, better ventilation is attainable—a matter of great importance in the transportation of fruit, grain, flour, and many other perishable commodities. It is, moreover, fire-proof, and when constructed with equal strength and capacity weighs one ton less than a wooden car. We are not informed as to the comparative cost of construction.

ENAMEL FOR METALS.—M. Pleischl, of Vienna, claims to have discovered a vitreous enamel for metals which combines the properties of extreme hardness, durability, freedom from noxious ingredients (lead and zinc), and malleability by contact with the substances to which it is applied.

IRON VESSELS of a thousand tons are now built which draw only eighteen inches of water, and a company has been formed in New Orleans to provide such vessels for the transportation of the products of the Mississippi Valley to that city.

THERE are eight large establishments in the United States engaged in the manufacture of pins, one factory turning out an average of about eight tons a week. American pins are considered the best in the world, and the demand from foreign countries is constantly increasing.

SCIENTIFIC PROGRESS.

Peculiar Phenomena Observed in Quarrying.

W. H. Nile, Prof. in the Massachusetts Institute of Technology, describes in the *American Journal of Science*, certain phenomena which are often observed in quarrying, such as fractures, sudden movements, and expansions of beds of stones connected with quarrying, and due apparently to the state of tension to which the bed was subjected when in its original state in the quarry. The Prof. mentions a spontaneous fracture in a bed of gneiss three feet and nine inches thick, which was sixty-one feet long, and mainly in the direction of the strike, but with some abrupt transverse turns. The transverse fractures were opened wider than the north and south—in two and a half months, the former five-eighths of an inch, the latter nowhere over one-fourth—showing that there was less resistance to motion in the direction of the strike. He mentions cases of anticlinals formed by movements in beds. In one instance a bed of gneiss twenty inches thick had been elevated an inch and a half, the northern slope of the anticlinal measuring twenty-three feet. The fold trended east and west, and at one end there was a crack three-sixteenths of an inch wide. In another instance in a bed three inches thick, the amount of elevation at the center was one inch, and there was a fracture along the whole length of the crest, trending east and west. Prof. Nile observed a bend form in a bed two and three-quarter inches thick; in a few hours the portion of the bed forming the crest was elevated three inches and a quarter, and the crest—five and a half feet long—had a fracture along it. Sudden sounds and explosions sometimes attend the movements and fracturings; and the sounds occur in all seasons, though more frequent in summer. Sometimes they are louder than the report from a blast, and at one time led to the supposition that the powder magazine had exploded.

The following is the example of the expansion of the rock during quarrying. A mass split off along one side, by wedges in a series of drill holes, for a length of 354 feet (requiring 1,200 wedges) in the direction of the strike, or nearly north and south, had a width of eleven feet and a thickness of three. By one end it was still attached. Soon after the fracture was made, it was observed that the halves of the drill holes were not opposite, and at the free extremity the amount of dislocation amounted to an inch and a half; or in other words, the stone was an inch and a half longer after the fracture than before. The subsequent exposure of the stone to the varying temperature and conditions of the weather for two months produced no change. As the free extremity was higher than the other, the phenomenon was not produced by gravity. Three other instances are mentioned of similar effects; on a smaller scale.

TEHAUNTEPEC SHIP CANAL.—The Commission appointed to examine and report on the Tehautepec ship canal project have published their report. It may be found in *Van Nostrand* for February. The eastern terminus of the canal, as proposed, is at the junction of the Coahuapua and Goatzacoalcos rivers, about 30 miles from the Gulf of Mexico, the latter river forming an excellent harbor for that distance. It runs west to the summit of Tarifa, 680 feet above the sea level, crossing on the way the Chalchijapa, Chicote, Goatzacoalcos (at Old Mal Paso) and Malatengo rivers. From the summit it passes through a plain where a cutting 100 feet deep, for several miles is recommended, descends to the plains at the foot of the mountains—a descent of 360 feet, requiring 35 locks,—and thence with a fall of 240 feet in 14 or 15 miles reaches the Upper Lagoon. Thence to reach the Pacific one or both of the narrow peninsulas, separating the lagoon from the ocean, must be cut through, and an external harbor or entrance piers thrown out. The plan is for a ship canal with an available depth of water of not less than 20 feet, with locks 450 ft. long and 50 ft. wide. Total length of artificial canal, 115 to 120 miles; number of locks, 120, with 10 foot lift; total rise, 600 ft. The country is healthy and very productive, laborers are easily obtained and building material is abundant. The extensive use of timber instead of masonry is recommended.

ABSORPTION OF MOISTURE BY BRICK AND STONE. Prof. Draper, of University Medical College, New York, has been making some experiments with regard to the relative absorption of moisture by brick and stone, using brown stone, Nova Scotia stone of the best quality, fine red Philadelphia brick, and a compact, hard-burned, white brick from New Jersey. His experiment showed that brick absorbs more moisture than stone, but parts with its imbibed moisture more readily, and therefore preferable as a building material, and that the white brick is superior to the red, absorbing only half as much moisture. In cases corresponding to the dews of summer or fogs, brown stone absorbs more moisture than the Nova Scotia stone and both these more than brick, and hence are more favorable to vegetable growth and inferior for building purposes. On the whole the materials rank in relative value for building as follows: 1. White brick; 2. Red brick; 3. Nova Scotia stone; 4. Brown stone.

The Late Solar Eclipse.

Accounts are slowly coming in, mostly by telegraph, from the various stations established to make observations upon the late eclipse. It will be some time yet before full reports will be received, and still longer before these reports will be collected, compared and properly worked up so as to determine their real value.

So far as yet appears, the observations have not developed any new facts; but have in several instances furnished important confirmation of conclusions which had already been measurably attained on previous occasions, but not with sufficient evidence to secure the entire acquiescence of all astronomers.

One important point thus definitely attained is the assumption that the corona is not to any considerable extent the effect of the atmosphere of either the earth or moon, but that rings, rays, rifts, streamers and all is a true solar appendage only slightly modified by our own atmosphere.

Dr. Janssen, one of the observers at Hindostan, writes to Prof. Newton that his observations proved that, independently of the cosmical matter which should be found near the sun, there exists about this body, an atmosphere of great extent, exceedingly rare, and with a hydrogen base. This atmosphere which doubtless forms the last gaseous envelope of the sun, is fed from the matter of the protuberances which is shot up with great violence from the interior of the photosphere—in the manner shown in the recent illustrated description given of one of these phenomena as observed by Prof. Young. Prof. J. supposes that it is this atmosphere which produces the large part of the phenomena hitherto denoted by the name of solar corona.

The question of the polarization of the corona light seems to be still left in doubt, owing to the puzzling inconsistencies, as heretofore noticed, between different instruments and observers.

Prof. Young, the American astronomer, who has pretty carefully analyzed the brief reports already received, writes to the Boston *Journal of Chemistry* that when we get the full reports, with photographs, etc., it may possibly happen that their comparison may lead to some entirely new discoveries, and almost certainly some new question will be raised which can be settled only at the next eclipse.

SOLID IRON FLOATING ON MELTED IRON.—E. Schott writes concerning this to the *Berg. u. Hutt. Ztg.* In casting wheels he divided the molds in two parts and surrounded these with a spring ring. As soon as the melted iron poured into the mold began to cool the ring opened and that up to $\frac{1}{4}$ inch, the wheel being 18 inches in diameter. After cooling the casting shrank to less than the original size of the mold. From this it follows that iron when heated has a greater, and when cooled a smaller volume than when fluid. The larger volume must, therefore, possess a less specific gravity, as is confirmed by the phenomenon of solid iron floating on melted iron. Commonly thin pieces of iron are employed for observing this phenomenon. The iron being a good conductor of heat, speedily acquires the temperature of the fluid mass, up to a bright red heat—the degree necessary for the greater expansion—and thus acquires a smaller specific gravity than the fluid bath and consequently swims on it; and this it does the more quickly, the thinner it is, and vice versa. Thicker pieces sink at first, but rise to the surface as soon as they are expanded by the heat,—somewhat analogous is the relation of ice to water.

SEC-SYSTEM OF NOTATION.—Dr. Lehmann, of Leipzig, according to the *Mechanics' Magazine*, proposes a new system of notation with 6 as a basis, counting and reckoning with half-dozen instead of tens. To avoid confusion, the name six may be changed to sec, so that we would count one, two, three, four, five, sec. The higher figures might be called twosec, threese, foursec, secsec or sess. This latter would be equivalent to 36, but would be written 1 and 2 noughts. It is further proposed to change the type so as to suit the new system. Among the advantages noted is the reduction of the extent of the multiplication table so tremendous now to school-boys and others. The following shows the extent of the tables under the sec-system. In making use of the ordinary type, it must be borne in mind that 10 is equivalent to 6:

$2 \times 2 = 4$	$3 \times 2 = 10$	$4 \times 2 = 12$	$5 \times 2 = 14$
$2 \times 3 = 10$	$3 \times 3 = 13$	$4 \times 3 = 20$	$5 \times 3 = 23$
$2 \times 4 = 12$	$3 \times 4 = 20$	$4 \times 4 = 24$	$5 \times 4 = 32$
$2 \times 5 = 14$	$3 \times 5 = 23$	$4 \times 5 = 32$	$5 \times 5 = 41$

The greater ease of addition, subtraction, multiplication and division would guarantee the decrease of errors in arithmetical calculations, etc., etc.

EXPLORATION OF ROME.—Renewed interest is now being shown in the exploration of the buried relics of Rome. The new government shows a disposition to take the matter in hand and private parties also are in the field. Two schemes have been prominent of late. One is to divert the river Tiber from its channel, with the idea that from its bed many relics of value will be obtained. Another is that of an Englishman, J. H. Parker, who has already made excavations and discoveries of no small interest, and who now proposes to form a company with a paid up capital of \$250,000, with the object of purchasing land in Rome, exploring it to the utmost, and then reselling it at an advanced price.

HOME AND FARM.

Flax Culture.

EDITORS PRESS:—There are few crops that have been cultivated over a wider range of country or for a longer period than flax. From the tropical plains of Egypt to the frozen shores of Russia, and from the earliest historic times down to the present day, its cultivation brought luxuries to the rich, necessities to the poor, and profitable employment to a vast number of farmers and artisans. From its fibre are manufactured articles that are worn with pride by the proudest in the land, articles that add a new charm and grace to the loveliest women, and articles fit for the garb of the laborer and the common purposes of everyday life. Those localities in which it is cultivated and manufactured generally enjoy a degree of prosperity far in advance of that of their neighbors.

As an instance, look at the condition of the peasantry in the different parts of Ireland. In the northern part of the island, where flax is extensively cultivated and manufactured, the people are more prosperous and intelligent than in the south and west. It is so in older countries. Owing to the large number that can obtain employment off a few acres of land sown with flax, the country is able to support a denser population than if the land were cropped with grain crops, wheat, barley or oats.

As the work of preparing the flax for the various fabrics into which it is manufactured is done within doors, the people can follow their occupations at all seasons without being interrupted by the inclemency of the weather. As a necessary, flax owes its value to the strength and durability of its fibre; but as a luxury its value is owing to the fact that the fibre is capable of being spun out to a thread of extraordinary degree of fineness. At the exhibition held in England in 1851, two specimens of flax thread were exhibited, one of which measured 180,000 and the other 228,000 yards to the pound.

Its Cultivation in California.

The cultivation of flax, until quite recently, was comparatively neglected in California, and, now again there is a tendency among the farmers to crase the name of flax from their list of remunerative crops. This is to be regretted, as the number of crops cultivated by the California farmer is smaller than it should be, according to the experience of the most skillful agriculturists.

Effect of Flax on Subsequent Crops.

The reason that flax is again being to some extent neglected, is not that the crop itself is unprofitable, but is owing to the fact that, in the opinion of many farmers, it has an injurious effect on the crop that succeeds it. This opinion is not without foundation. During the last few years flax has been cultivated to some extent in various parts of the State. In many localities could be seen fields of wheat and barley, portions of which were the previous year under flax, and portions under some other crop. No difference appeared in the wheat or barley until a month or two after it had appeared above ground; then a marked change began to take place. In that part of the field that had the previous year been under flax, the grain assumed a sickly color and failed to grow as rapidly as that in the remaining portion of the field. In less than another month the inferiority of the part of the field that had been cropped with flax became so well defined as to be apparent to the most careless observer, though hundreds of yards away. At the harvest time the flax ground in some instances did not yield half so much as the rest of the field. This happened quite often enough to show that certain kinds of land are injured by flax; and many holders of large tracts when renting their lands, put in the lease a provision forbidding the renter to cultivate flax. On the other hand land has sometimes been cropped with flax several years in succession without the soil appearing to be injured thereby. In fact, if crops that are preceded by flax are in some instances poorer on that account, in others, they are richer.

When Flax May be Profitably Grown.

It appears that flax exhausts the ground

of the moisture it contains to a greater extent than do wheat, barley or oats. But where the ground is moist enough, and in stiff adobe soils, flax, instead of injuring seems to benefit the following crop. There is plenty of soils of this description, and on such, flax is one of the most remunerative crops that can be grown. This kind of land yields nearly as large an amount of flax as it would of wheat, while the price of the former is generally twice that of the latter. Flax is sown in California any time between November and April. If the ground is clean it is better to sow early; but if the ground is foul it is better to allow the weeds to spring forth and then plow them under. The ground must be worked better than if intended for wheat. Very stiff soils would require to be plowed three times, or plowed twice and cultivated once. When sown for the fibre it is best to sow thick, but when sown for the seed only it is best to sow thin. Unfortunately the flax is not utilized in California, though we consume and import an immense quantity of articles manufactured from it. Of the articles manufactured from flax the United States imports over \$18,000,000 worth annually. Californians consume more than their share of these. For every ton of hay the farmer presses into bales he uses a dollar's worth of rope; for every sack to hold his potatoes and grain he pays ten or fifteen cents. It takes about \$1,000,000 worth of sacks to hold the wheat alone. All these are important, but they could be manufactured from flax or hemp grown in this State, and thus the money kept at home. When sown for the seed it was common to sow fifty pounds to the acre, but experience has demonstrated that in dry years a smaller amount of seed will produce the largest crop. Last year the crop was heaviest in many places where only twenty-five or thirty pounds to the acre had been sown.

Flax as a Prolific Crop.

Flax, under favorable circumstances, is a very prolific plant. Last year a single seed dropped accidentally in a garden in Pajaro Valley, gave a return that is worth recording. The plant suffered for water, as did all other crops in that part of the valley; owing to this cause several of the blossoms fell off and left no hulls behind them. Still the plant appeared so luxuriant that it attracted the gaze of all those who came near it; and many of them, not content with looking at it, carried off a great number of the seeds. The fowls, too, got into the garden and took some more away, but notwithstanding all these drawbacks, that seed yielded, by actual count, over four thousand fold. Reckoning those taken away, the whole number could not have been less than six thousand seeds.

In many parts of the State a crop of fifteen hundred to two thousand pounds to the acre has been produced. From ten to fifteen hundred pounds may be looked upon as an average.

The Expense of Cultivation

And the profit arising from an acre of flax may be estimated as follows:

Plowing thrice and sowing seed, per acre.....	\$4.00
Culling.....	1.00
Hauling to stack.....	1.25
Threshing.....	2.50
Sacks.....	1.25
Sending to San Francisco.....	4.00
Commission on sale.....	1.50

Total.....\$15.50
Receipts 1,200 pounds at 3 and 5 cts. per pound...\$36.00
Profit per acre.....21.50

These calculations are based upon the supposition that the farmer does nothing himself, but as he does nearly all the work of course the profits are greater. Flax is threshed now in the same manner that it was two thousand years ago, that is trampled out with horses. A circular space is cleared in some convenient part of the field in which the flax was grown; this is well sprinkled with water, beaten down and allowed to dry until it becomes firm, and on the floor thus formed the flax is thrown while a few boys drive half a dozen horses around and around on it until it is threshed. This is not a very expeditious mode of proceeding, but it has these advantages: the flax is threshed better than it could be by machinery, and the farmer and his sons can do the work themselves.

JOHN HAYES.

THE SUNFLOWER AND NITROGEN.—No plant absorbs nitrogen so rapidly as the sunflower, as ravenous as the stomach of an ostrich. A pigeon was buried between the roots of a sunflower, after some weeks not a vestige of the bird was found—the plant had devoured and digested even the feathers.

Farmers, write for your paper.

History of the Potato.

[Written for the Press by C. H. DWINELLE.]

Among the natural productions given by the New World to the Old there is hardly any which can be said to exceed, or even equal in importance the common potato, *Solanum tuberosum*. Perhaps the precious metals alone have had an influence on European society and industry to be compared with that exerted by this humble tuber.

There is considerable confusion in regard to the history of the introduction of the potato into Europe, arising from the imperfect descriptions given, and the similarity of its mode of growth and uses to those of the sweet potato, which is also of American origin.

Original Habitat.

"Royle's Botany of the Himalaya Mountains" says: "The Old World is indebted to the New World for the potato. It was first found in a wild state in 33° south latitude, in the mountains near Valparaiso about 1550."

La Cronica del Peru, printed in Seville, 1553, contains a description and engraving of the plant, which is still found growing wild in Peru and Chili. It is said that the natives of Peru called the potato *mapas*, and that our name comes from confounding the plant with the sweet potato, which the natives of the West Indies called *batata*.

By Whom Carried to Europe.

Among those who are said to have carried the potato from America to Europe are the two Englishmen, Sir John Hawkins and Sir Walter Raleigh. Hawkins made three slave-trading voyages between Guinea and Hispaniola, as San Domingo was then called, and afterwards held several high positions in the English navy. Raleigh, between the years 1576 and 1589, made several unsuccessful attempts to colonize Virginia, whence he obtained the potato, there called openawke, and planted it on his estate near Cork. As to whether the potato was a native of any part of North America, or was introduced from the south, has been a matter of much doubt, and at present we have no means of deciding the case.

Popularity in Ireland.

The soil and climate of Ireland proved so favorable that the culture of the potato extended rapidly, until it became the most important crop in the country, being among large numbers of people almost the only article of food. There were several causes for their popularity, among the chief of which were their great productiveness, and their safety from destruction by an enemy making a raid through the country. During the religious wars, which raged so long in Ireland, this last consideration was a very important one, for while a field of grain could be destroyed in a few hours, by turning cattle or horses into it, or if dry, by simply setting fire to it, potatoes in the ground could be reached only by the slow process of digging.

Introduction into England.

From Ireland the culture of the potato was introduced into England by the wrecking of a vessel at North Meols, at the mouth of the Ribble in Lancashire, which county is still famous for the quantity and quality of the potatoes raised in it. From Lancashire potatoes were carried to all parts of England, but were not so well received as in Ireland, and, in fact, were not generally used for nearly a hundred and fifty years after their introduction. It may seem strange to us now that the merits of the potato were not sooner appreciated, but it must be remembered that great improvements have been made in varieties and modes of cultivation, and that the potato as it was when first carried to Europe, would not be likely to bring a very high price in the San Francisco market.

When first introduced into Scotland it is said that the Puritans objected to it because not mentioned in the Bible, and that it was not cultivated as a field crop there before 1732. In 1796 Essex county alone raised 1,700 acres of potatoes for the London market.

How Made Popular in France.

In France they were received with even less favor than in England, and were not much used before the middle of the 18th century. King Louis XVI and others in high authority recommended them to the people in vain until Antoine Permentier, the celebrated writer on rural affairs, with a thorough knowledge of human nature, devised the following plan:—He planted some potatoes and surrounded them with signs, giving notice that any person who should be detected disturbing them would be punished severely. In a very short time they were all stolen and eaten, and from that time potatoes were very popular.

There is probably no other crop which has so wide a range and produces so many pounds of food to the acre. It flourishes in many of the

tropical countries, and as far north as Iceland.

Botanical History.

Among botanists the common potato is known by the name of *Solanum tuberosum*. It is in the same genus with the Egg Plant, Nightshade, and Jerusalem Cherry, and is closely related to the Tomato and Red Pepper; all of which belong to the Nightshade Family, (*Solanaceae*).

Potatoes are commonly spoken of as roots, or tubers growing upon the roots of the plant. Sometime since a "practical cultivator" in one of the Western States announced as a remarkable discovery of his, that the potato has two kinds of roots, one for drawing nourishment from the soil and the other kind bearing the tubers. The fact is the tubers are simply the ends of underground branches, very much enlarged by a deposit of starch. The eyes are buds, answering to those which appear at each joint of the vine above ground. The true fruit is the ball which follows the blossom, and resembles very closely a green tomato. The plant can be propagated from the tubers, as is commonly done, from cuttings taken from the vine when growing vigorously, or from the true seeds of the ball. The two first methods, in the vast majority of cases, give tubers like those of the parent stock, but seedling seldom or never do so, at least among the cultivated varieties.

The Tops Poisonous.

There is a poisonous principle contained in potato tops which is known as *solanine*. Ignorance of this fact leads many people into serious trouble, especially where the winter is severe enough to check all vegetation, and the succulent shoots of the potato are among the first things to tempt those who are fond of boiled greens. Violent illness, and even death follows their use as food. If a potato tuber is exposed to the sun while growing, it becomes green, and is likely to produce unpleasant effects if eaten, thus giving additional proof that it is only a modified branch.

Varieties.

As mentioned above, seedling potatoes are rarely, if ever like the parent plant. As many as 300 have been carefully watched without finding a single one exactly like the original. It is said that the seeds from the same ball may produce tubers of all the colors of which a potato is capable. Much attention has been given to the raising of seedling by persons interested in procuring improved varieties. Mr. Lawson, curator to the Highland Society, exhibited no fewer than 1,600 kinds in 1837. Very few of the seedlings prove to be worthy of extended cultivation. The late Rev. Chauncey E. Goodrich, of Utica, N. Y., spent sixteen years in studying and experimenting on the potato. He raised many thousands of seedlings, some state as many as 36,000, but of them all, only about a dozen proved to be of really superior quality.

There is at least one person in California, Mr. A. D. Pyral, of Oakland, who has paid considerable attention to raising seedlings, and will deserve a handsome reward if he originates even one first rate potato. When first brought into cultivation the tubers were very small and ill flavored compared with what they have become with good care, and no telling what good qualities may yet be developed. There are many interesting points in the culture and uses of the potato which may be touched upon at another time.

SPARE THE BIRDS.—The little painted songsters follow man, and attend upon him. It is their mission to clear his ground and trees of insects, which would otherwise destroy his fruit and grain. What would the country be without its birds? Their innocent notes gladden the ear, and their beautiful forms and plumage delight the eye. A pair of robins have been known to consume two thousand caterpillars in one week, and what an amount of service to that farm was that one week's work! The farmer who shoots the small birds that confidently surrounds his dwelling, errs both in judgment and benevolence. What if the songsters takes tithe of the ripened produce of the field and garden; it is nothing but their due. They present their bills some months after the labor is performed, and are fully entitled to their living.

HIGH CULTIVATION.—The *Mine Farmer* alluding to the subject of "high cultivation," so much talked of and written about, says that there is much more talk than improvement. A man looks over his farm, of many acres, and finds the whole needs aid, but not being able, at once, to render it to all portions, makes no particular effort to improve any part. The right way—right because alone practicable—is to commence with a few acres at a time. Get these in good heart the first year, and the increased product from them will aid in experimenting on another section the succeeding year. In this way the farm will soon become renovated, and, properly cared for, will not run down again as "long as grass grows and water runs."

ONE REASON for the popularity of the *RURAL PRESS* is the fact that it possesses in its columns some attractions for each member of every intelligent family—old and young.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Gazette, March 21: THE WEATHER.—For the past week the weather has been lovely, and nature in these parts will soon be arrayed in her most gorgeous apparel. Those who live in the frozen regions of the East who would see California in her happiest moods should take a look at her during the next four weeks. The last days of winter are always glorious in California; "For the winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in our land."

AMADOR.

Ledger, March 21: WILD PIGEONS.—For some weeks past the hills to the east of Jackson have been filled with pigeons, and our sporting friends are having a good time. During the past week our landlord, Mr. E. Evans of the National Hotel who is the Prince of our Jackson shootists, has been feeding his boarders on pigeon pie, and they are growing "plum" on it. These birds are of a much larger size than the tame or home pigeon, and have yellow instead of black legs; their meat is far sweeter and more tender than the tame pigeon. It is a matter of surprise to us that some of our Bay sportsmen do not visit Jackson and have a good pigeon hunt within a few miles of our town.

BUTTE.

Enterprise, March 9: Some of our sports are having a fine time in killing wild pigeons, now in great numbers in this part of the valley. We believe that last year was the first time they made their appearance in this immediate neighborhood. Should they continue to increase as from last season to this, they will become a great pest to our farmers during seed time.

CONTRA COSTA.

Transcript, March 21: GRAIN PROSPECTS. Not long since the Petaluma *Crescent* had a somewhat lugubrious article on this theme, so far as the prospects of the crops is concerned. The soil was soaked with water, and in few places had any work been done. The lowlands were in such condition that plowing could not be commenced for some time, even though no more rain should fall. The Editor admits however that there is grain enough sown in the upper portion of the county to supply all the necessities. We imagine that the genial, cloudless days of the past week have brightened the countenances of the "depressed" farmers of Sonoma.

The truth is that county is the most highly favored, climatically speaking, of any in the State. Cereal crops never fail. Drouth is unknown. This season however the husbandmen has got a little more rain than he desired, *hinc ille lachryme!* During the last three summers when in the great San Joaquin Valley, and plains of Tulare, the fields were lying brown and bare, the granaries of Sonoma, were groaning under the weight of the life sustaining cereals. We know that the whole souled and generous farmers of Sonoma, would rather see abundant harvests from San Diego to Siskiyou, than have them limited to their own locality, even though they would be pecuniarily benefitted thereby.

THE GRAIN CROP.—In conversation with a farmer yesterday he stated that the grain crop of the country would exceed the most sanguine expectations.

COTSWOLD RAM.—Yesterday a merino ram, which had arrived on the train, was sold to Mr. Lathrop for \$200. The ram was well covered with the valued staple, and is represented as being an A. No. 1 specimen of the specie.

ORANGE TREES.—Steamer Orizaba arrived to-day bringin a large lot of orange trees some of which came over by ferry for this place and vicinity; some doubt the raising of this fruit here, it not being tropical enough, but there is no harm in trying and seeing what time will develop.

LOS ANGELES. Los Angeles correspondence of Napa Reporter, March 16: We are delighted with your hopeful attitude in regard to the future prosperity of our State.

From your position you can speak knowingly of the northern and eastern portion of this State, but all you hear of this section must come second-handed.

The city of Los Angeles has a population of 9,000 within the city limits—an area of four miles square. The valley of Los Angeles is about twenty by forty miles, and is bounded by the Coast Range on the

north and by the Pacific ocean on the south. Across this valley run three rivers—the Los Angeles, Saint Gabriel and St. Anna, besides several small mountain streams. This county is subject to long drouths, yet with the assistance of these streams is sufficiently irrigated for agricultural purposes. Showers are frequent, and consequently we have one of the most fertile valleys in the State. Eighty bushels of corn, forty of barley or rye is not uncommon. The orange, lemon, olive and palm trees are cultivated extensively. The grape is cultivated largely also. Many of the orange groves will yield \$1,000 per acre this year. Lemons and limes are equally profitable. As to scenery, the world cannot furnish anything more lovely than Los Angeles, at the present time. The evergreen, orange, lemon and olive orchards loaded with fruit—barley, wheat and rye fields waving in the breeze—the gardens all in bloom—on one side of you the rolling ocean, on the other the snow-capped mountains. The beautiful streams supply not only the wants of man and beast, but of all the luxuriant vegetation of the valley. The name, "Home of the Angels," conveys an idea of the lovely scenery. These lands can now be bought for from \$10 to \$60 per acre, varying in accordance with the distance from the city and water privileges. The climate is unsurpassed on the continent. We have no miasma, consequently no chills and fever. Neither consumption nor rheumatism originate here. Having no fence law here farmers can begin on half the capital required in former years.

NAPA.

CALISTOGA CORRESPONDENCE. — The weather continues fine; farmers continue pleasant (except those along the foothill, where the land is getting too dry to be plowed); crops continue growing and merchants to smile hopefully over the prospects of the season.

On Wednesday, the first trip to the Geysers was made. Five persons were aboard—three Eastern and two European. The road is in a moderate condition. Regular trips will soon be made for the accommodation of tourists. The proprietors of the line of stages anticipate a large travel during the coming season.

OUR BUSINESS.—The people of Calistoga are improving the present fine weather by planting out shrubbery about their houses, making additions and other improvements. Large quantities of wheat are being shipped. Our merchants are appreciating a better time, in the shape of larger sales, and more comfortable cash receipts.

KNIGHT'S VALLEY.—The farmers in Knight's Valley are well along with their work. The prospects for large crops are better than ever before. Mr. Brookshire, whose stock of humor never runs out, makes all travelers, who stop at his hotel enjoy a hearty, good humored laugh, and, if it is desired, can administer to the wants of the inner man in a most satisfactory manner.

ST. HELENA CORRESPONDENCE.—March 20th, 1872. During the last week, we have had most lovely spring weather with the exception of two or three days north wind. The north wind was very disagreeable, and has dried the ground so hard in some places that the plows have had to stop; and, strange as it may seem, we are beginning to want a little more rain. I think from appearances, we will have our wants satisfied in a few days.

THE POPE VALLEY ROAD.—Mr. Thos. Greer, our roadmaster, is re-opening the Pope Valley mountain road. He has a large force of Chinamen at work, and will have it ready for teaming in a few days.

SAN DIEGO.

Union, March 14: WILD FLOWERS.—The hills back of town are covered with wild flowers of nearly every hue. A handsome bouquet gathered about a mile from the Union office was placed upon our table yesterday. In the collection composing the bouquet we noticed several varieties regarded as handsome garden flowers in the East.

SAN LUIS REY.—M. A. Galsh, of San Luis Rey, called at our office yesterday to give us some notes about agricultural affairs in the section of country where he resides. He informs us that the grass is now in as fine condition as it has been for years, being in many places fully fifteen inches high. The stock is all in good condition, and is rapidly growing fat. The grain fields show that so far an abundance of rain has fallen. He thinks it is a safe thing to rely on a good crop in the San Luis Rey Valley.

WARNER'S RANCH.—At Warner's ranch the wheat and barley are thriving so well, that the farmers all regret that they did

not sow a great deal more land than they have. Mr. Breeze who has over a hundred and fifty acres sowed with wheat and barley in the valley, says that he expects to make one of the largest crops ever gathered in San Diego county. The other farmers all give equally cheering reports.

PAWII.—The agricultural reports from the Pawii valley are of the same encouraging character as from other sections of the country. Mr. Robinson who arrived in town from the valley yesterday, tells us that the grain on Coler's ranch is doing excellently, and that in all probability a large crop will be harvested this season.

THE BALLENA VALLEY.—A gentleman just arrived from the Ballena Valley says that the crops of all kinds are doing well. The grain in particular deserves mention. The old residents all unite in saying that the wheat and barley give better promise for large crops than they have for years past. Potatoes and all kinds of vegetables are also looking well and growing nicely. The want of rain has not been felt in the slightest degree in the Ballena Valley this year.

NEW POTATOES.—New potatoes are making their appearance in our market. They are grown in the valleys in the neighborhood of town.

WHALING.—Another whale was taken on Saturday last by the whalers, outside of the Point. This makes the seventeenth captured this season. The yield of oil from this number is about 25,000 gallons.

TURTLE.—A turtle weighing over 200 pounds was caught in the Bay yesterday, by a son of Mr. Verlaque.

CHINESE JUNKS.—A couple of Chinese junk arrived in the Bay yesterday from the lower coast, with abalones and dried fish.

SAN JOAQUIN.

Independent, March 23: WEST OF THE RIVER.—C. D. Needman, who resides on the plains a short distance west from Bantam, brought to this office yesterday a sample of his crop of wheat and barley. The barley is about thirty-three inches long, and is a sample of the crop on about seventy acres of land. The wheat is nearly as rank a growth as the barley, and is a sample of the average crop on one hundred and seventy-five acres of land. The crops generally on the west side of the San Joaquin river are remarkably promising.

SANTA CRUZ.

Sentinel, March 16: LOVELY SPRING.—It has been ten years since our mountains, hills and valleys have been so profusely overspread with a sward as beauteous as to-day greets the eye on every hand. The cattle on a thousand hills and the flocks in more numerous valleys, reveal already the great blessing this year of extended rain will prove to California. The grain fields present a freshness and growth unknown to former years, and the fruit so varied in kind, will hardly fail to yield its accustomed, bountiful harvest.

NEAR THE WHITE HOUSE DAIRY, on Steele's ranch, near Pigeon Point, in this county, a monster grizzly bear killed a cow during the last few days, and B. M. Schofield, the owner of the cow, placed a bucket of syrup, well strychnined, near the place where the cow had been killed. The next night the bear came back and ate the syrup and died on the spot. In the morning several parties, including Chris. Coffin, formerly of this place, started to learn the result, and approaching the spot, saw the bear, as they supposed, quietly sleeping near the place where the poison had been left. The whole party were seized with fright at so near an approach to so huge a monster (for he proved to weigh 1,200 pounds) and Coffin, to make sure of his security, climbed a tree near by, while the balance made their escape, thinking, doubtless, that at every jump the bear was at their heels; hours passed away and the bear failed to come to an awaking. Coffin first ventured to whistle, that not moving old bruin he gave a huge bark, like a dog, this did not move the terrified, and Chris. naturally came to the conclusion that the old fellow had partaken too freely of the syrup, and down he climbed, and moved as brave as any one could toward a dead bear. Chris. says the rest have not returned yet, so badly were they frightened at the sight of the dead bear.

SONOMA COUNTY.

Crescent, March 23: PETALUMA.—The hills encircling this city present a most charming aspect. The warm weather of the past two weeks has caused the grass to grow with remarkable rapidity. Dairy-men report excellent food on their ranches, and cattle are fast getting an abundant supply of adipose tissue on their so recently gridiron-like sides.

Ditchers went to work on Thursday, digging the ditch for the pipes of the Sonoma County Water Company. The length of pipe to be laid is between five and six miles. From the main reservoir, to which the pipes extend, to the head of supply, the water will be carried in a flume about a mile and three quarters in length. The reservoir for supplying the city will be located on the hill back of the Merchant Place, northwest of the business portion. It will have an elevation of nearly 300 feet, giving a fall which will force the water into the highest parts of the city.

TULARE.

Morning Call, March 19: Letter from Visalia says: The prospects for abundant crops are more flattering than they have been for ten years. Grain could not look better, and a few light showers in April is all the farmers desire. A larger amount of land has been sown this year than ever before, and it is confidently expected that before harvest the railroad will reach Visalia. Thousands of fat cattle will soon be driven from this county to San Francisco.

THE WOOL MARKET is excited. Sales have been made as high as forty cents. Some are holding on, but the majority of wool-raisers have disposed of the Spring clip. It is thought that one man has lost \$25,000 by selling his wool too early.

THE PEOPLE here are on the *qui vive* to know where the railroad depot will be. It is feared that the road will not come nearer than three miles from Visalia, and in that case property will rapidly depreciate.

YUBA.

Appeal, March 22: WOOL.—The prices of wool seem still upward and onward. It now ranges from forty-five to fifty cents per pound, with holders disinclined to contract. George W. Gridley of Butte, has been offered fifty cents per pound for his entire clip, but declined to contract for that price. Wool-growers will reap a rich harvest this season if they do not hold the clip in expectation of an advance until a reaction sets in.

WOOLEN MILLS.—The woollen mills are running on eleven hours time and turning out large quantities of goods. The agent is in the market, making heavy purchases of the spring clip.

OREGON.

Mountaineer, March 9: The Columbia river is gradually rising. It is now about as high as it was several weeks ago—twenty feet above low water mark. From the present appearance of the weather it will continue to rise. We are glad to see the water pass off in this manner, for it lessens the possibility of having our streets flooded this year as they were last; which is a consummation devoutly to be wished.

BUYERS are giving from forty to forty-two and a-half cents for wool delivered.

COLORADO.

Miner, March 14: SUMMIT COUNTY.—The mineral, pastoral, agricultural and scenic wealth of Summit county are on the broad gauge principle, unrivalled by any section of country on the continent of North America. A grand system of water courses, large and never failing, furnishes the means of power for driving machinery of unlimited capacity as well as large supplies of water for hydraulic power to wash the vast placer grounds, filled with millions of gold. After a careful examination of the placer gold fields of Summit county we are satisfied that it will take thousands of men, hundreds of years to work them out. The profits for many years to come. The western portion of Summit county is filled with coal measures that will as soon as this section of the country is penetrated by a railway, furnish unlimited quantities of cannel, bituminous and albertine coal as well as kerosene shale. The time is not far distant when the valley of the White river will be known as the richest coal basin in the United States.

The climate of Green River valley is mild, pasturage abundant and nutritious and admirably adapted to fruit culture. The streams are well stocked with trout, the pasture grounds are covered with a great variety of game and the forest with game birds. The agricultural and pastoral advantages of the section of country of which we are speaking are unrivalled. Stock can be subsisted throughout the whole year without the trouble or expence of cutting or curing hay. The yampah, an esculent of which bears and Indians are very fond, grows luxuriantly and furnishes a useful hint to all who wish to engage in sugar beet culture.

To sum up in a few words the vast and varied resources of Western Colorado and Eastern Utah, we are warranted in saying that the section of country referred to is the last and best portion of the United States to explore and settle up.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

SAFETY LAMP.—Emil Boesch, San Francisco. This improvement relates to that class of argand burners in which the flame is regulated by turning the outer case of the burner, and it consists in a novel arrangement for regulating the flame by turning this case without raising or lowering the chimney, and by this means the relative position of the chimney and the flame which is so essential to excellence in these burners, is maintained unchanged. The lamp is also provided with one or more ducts or passages, either of which may be used for conveying the gas which may be formed in the oil holder, to the central tube which feeds air to the flame, so that the gas and air will be mingled previous to their coming in contact with the flame, and by this means all danger of explosion from an excess of gas in the oil holder will be averted.

DISH WASHING MACHINE.—Catharine Woodruff, Antioch, Cal. This invention relates to an improved machine for washing dishes, and consists mainly in the employment of wire racks for supporting the dishes and partitioned baskets of the same material for the different kinds of dishes. It also consists in the use of a revolving agitator which throws the water forcibly through the meshes of the racks and baskets, thus thoroughly cleansing the dishes in a short time.

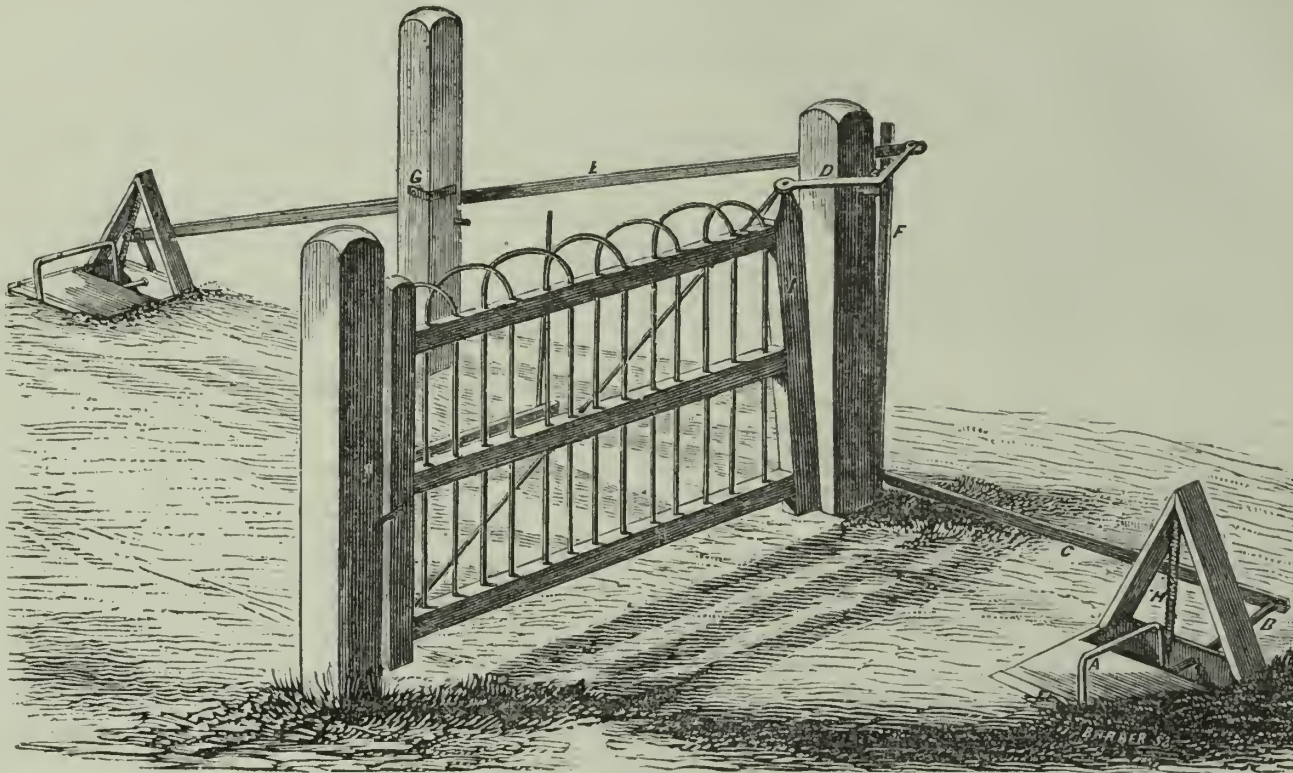
GRAIN THRESHER AND SEPARATOR.—Joseph Esse, Redwood City, Cal. The object of this invention is to provide an improved arrangement of devices for more thoroughly threshing and cleansing wheat and other grains, and it consists in the use of two or more threshing cylinders and their concaves in succession. It also relates to an improvement in the straw-carrying devices, and finally to a novel shoe and screens for cleansing the grains after it is threshed.

TO CORRESPONDENTS.—Our numerous correspondents will save us much trouble and perhaps make their articles more satisfactory to themselves, by dividing the subject matter and putting in appropriate "sub heads" while they are writing. By noticing the letters in the Press from time to time, they will see that the majority of the letters are divided in the manner referred to, but we generally have to do it ourselves. Frequently something is spoken of in the first part and again referred to below, making it difficult to divide it properly. By doing as we suggest our correspondents will find it easier to write clearly and at the same time oblige us. If you are going to treat of several subjects in one letter, write them on a slip of paper by your side, and treat of each one separately under its appropriate head. Our endeavor is to make our paper as fresh and attractive as possible, and if our readers desire to read one thing and not another, by seeing the articles "sub-headed" they can take their choice.

THE OVERLAND FOR APRIL contains articles of more than ordinary merit. The contents embrace Sea Studies; A Ride through Oregon; South Sea Bubbles; Three Days of Sanctuary; The Northern California Indians; Evelyn; Wants and Advantages of California; In the Shadow of St. Helena; Exhumed; Yosemite Valley in Flood; Juanita; Abigail Ray's Vision; Sam Rice's Romance, and Transition. The book notices and "Etc." are as usual, good.

Self-Opening and Self-Closing Gate.

The accompanying cut represents Dickinson's Self-opening and Self-Closing Gate. Although not a California invention, it is said to be one of merit, and has been well tested in the Eastern States. It is constructed so that when the vehicle approaches it, the wheels on one side pass over the lever, A, which is connected to the gate-tongue, D, by a rod, C, F, which opens the gate and fastens it open. After passing through, the carriage passes over a similar lever, also connected with the gate hinge, D, causing the gate in its rotation to shut. The gate is simple in its construction, both of iron and wood-work, and the



SELF-OPENING AND SELF-CLOSING GATE.

working parts appear about as simple as the gate itself.

If a neat, cheap gate is desired, it may be made light with three cross-bars of wood and one-fourth inch wire, neatly curved at the top, the lower end hid in the bottom bar as represented by the cut, which is the style of a factory-made gate. The manner of operating can be seen at a glance, the whole thing being simple and effective. By the use of these gates all the difficulties of getting out of vehicles, raising latches, pulling straps, etc., are obviated. Descriptive circulars can be had of, or the gate may be seen at, Wiester & Co.'s, No. 17 New Montgomery street, in this city.

A PIONEER REMINISCENCE.—An eastern exchange says: The Montague Trading and Mining Company, organized in New Haven in '49, held a reunion the other day, and the occasion was one of great interest. Fifty-four persons from New Haven and neighboring towns composed the expedition of whom twenty-four are known to be dead and fifteen are missing. They took out a quantity of stores with them for trading purposes. On arriving at California they went to the Yuba River mines, where a part of the company engaged in mining, and the others in trading. Within a few weeks after their arrival at the mines all but five or six of the party were taken sick, and fifteen soon died. Only nine of the original party were present at the reunion. Samuel S. Woodruff, of Southington, was elected President of the Association, and E. E. Camp, of New Haven, Secretary. A meeting will be held annually hereafter.

The weekly consumption of cotton in Great Britain in 1871 averaged 60,000 bales, of which 35,000 bales were raised in this country. In the last two years the cotton consuming capacity of Great Britain has increased 10 to 15 per cent.

GRAIN valued at \$2,000,000 is said to be stored in warehouses along the Willamette River, Oregon, most of which is to be shipped to Europe.

Recent Publications.

We have received from Roman & Co., 11 Montgomery street, a very neatly bound volume of "Half-hours with Modern Scientists," containing a discourse on the Physical Basis of Life by Huxley; the Correlation of Vital and Physical Forces by Barker; as regards Protoplasm—Reply to Huxley, by Stirling; On the Hypothesis of Evolution, by Cope, and Scientific address, by Prof. Tyndall, on the method and tendencies of physical investigation; On Haze and Dust; and on the scientific use of the imagination. The work is neatly printed and the names given above are sufficient guarantee that the contents will be

AGRICULTURAL EDUCATION.—An esteemed correspondent deprecates the indifference manifested by our State Legislators and by the people generally in the matter of agricultural education. We fully agree with him in the necessity for more interest in this matter, but fail to see how it can be brought about by establishing an agricultural school in every county until we can get something like a fair attendance and interest in the one school already established in the very heart of one of the best agricultural counties in the State. Something of the plan he suggests has been put in practice in the most densely populated portions of Germany, and may eventually be made practical in some

portion of this continent; but not until the country is filled up with manufacturing enterprises which will furnish so good a home market for our agricultural productions that an individual can make it more profitable to devote his entire time to the cultivation of five acres, than to spread himself out over a hundred or more. Our correspondent's suggestion that agricultural text books should be prepared and introduced into our common schools is a good one. The general principles of agriculture should be made as much a regular branch of study in our schools as natural

philosophy, astronomy or English grammar even.

Hair Oil for Horses.

Amid the thousand and one preparations for improving the growth of hair, and make it fine and smooth, says a correspondent of the *Am. Ag.*, we have long wondered that no receipt has been devised for improving horse hair. Why not? tell us why not, Dr. Youatt and Dr. Dadd, or any others of the profession. But at length, an end has been put to our inquiries; the horse is now to be provided for, as well as his rider. The oil has not, to our knowledge, found its way into the market, bottled and ready for use; but a receipt for making it has been published, so that every one can furnish himself with the invaluable article. Did we know to what man or journal to give the credit of this discovery, full acknowledgement should be made. Judging from the learned terms used, we think it must have originated at some great University. No common farrier could have conceived it. Well, here is the formula, free as air, just as we find it. The horse-Latin in which it is couched will be easy to translate:

R(take)
Brushus et curricomus.....ad libitum.
Elbow greesus.....quantum sufficiens.
Blunketisus.....first ratus.
Stabulus (in winter).....warmus.
Fodderus.....never say diet-us but mealus et oats.
Exercisus.....non compromisus.
The effect will be:
Coatus shinus.
Appetitus, wolfitus.
Muscularitus, two-forty-itus.

A FARMER'S house should always be retired enough from the main thoroughfare, to escape the noise and dust incident to travel, and this gives room for the exercise of taste in cultivating and adorning the premises.

IT IS SAID that one of Boulton & Watt's original engines is at the Spanish cinnabar mine at Almaden, that it was erected there in 1799, and that it has been at work ever since.

GOOD HEALTH.

Brandy as a Medicine.

Brandy kills thousands every year who were healthy before they began the use of it; then it seems fair to infer that it will kill the sick more speedily.

Dr. Lees says that he was living near Buckingham Palace, in London, where Prince Albert was taken sick. His case was doing well for a few days, when they began the use of brandy to strengthen him, to enable him to recover more rapidly; the more he was stimulated, the worse he grew until he died. It is true that they thought it was the best thing for him, but their thinking so did not make it so.

Some years ago when it was the custom to attempt curing *delirium tremens* by giving brandy, one out of every four died at Edinburgh Hospital. Since then, the professor of the medical department has treated 300 cases of *delirium tremens* without alcohol, without losing a single patient.

Professor Gardener, of the Glasgow University, gave a hundred men thirty ounces of alcohol; seventeen out of the hundred died. Another hundred were allowed only three ounces, and eleven died out of the hundred. Of 209 cases of young persons, who were not allowed either wine or whisky, not one died.

In a total hospital in Leeds, of 300 patients who took not a drop, all recovered. Let facts decide.—*Hall's Journal of Health.*

WHEN DO MEN DIE?—Medical experience proves that in chronic diseases the greater number of deaths occur just before dawn. This is eminently true of brain disease, and of those related cases where death results from an exhaustion of the vital power through overwork, excessive excitement or nervous prostration. It is at the hour of five o'clock in the morning that the life force is at its lowest ebb, and succumbs most readily to the assault of epilepsy, or paralysis, or of the fatal lethargy that comes in those vividly beautiful picture-dreams, of which medical science has as yet found no name, and of which it has taken no sufficient cognizance. Nine-tenths of those who die in this way expire in their sleep. Men who do brain work, and who are on the shady side of forty, should be on their guard against this insidious enemy. They should beware of five o'clock A. M., for it is a perilous hour. Do you find yourself unable to sleep when you retire for the night, exhausted with your day's work? Do you, in vain, turn from one side to the other? Does your brain persist with working when you would fain have it rest? Do old saws and scraps of rhyme repeat themselves in your memory with wearisome iteration, defying your utmost efforts to silence them? Then, I say to you, beware! You will be sure to sleep at last. It is only a question of time, for, soon or late, nature will assert her rights.—*Ec.*

HIGH HEELED SHOES.—The *Examiner* of this city, recently denounced in very proper terms the prevailing fashion of high-heeled shoes, by which our young girls are weakening their ankles and spoiling the shape of their legs. It says:

Every day in the streets of San Francisco, or any other city, we suppose, can be seen human beings of all ages limping along in painful grotesqueness, instead of treading the earth as if they possessed the divine right to trample dirt under foot. It is with little expectation of influencing any man or woman to abandon high-heeled boots and shoes—for we know the obstinacy of both sexes in all matters pertaining to fashion—that we continue our remarks. But no man of observation or sensibility can notice without pain the young of either sex passing him on the street, every hour in the day that he may chance to be abroad, with the distortion of the ankle—the constant projection out of the proper line of the lower limbs, without feeling a pang of regret that so much of future misery is being needlessly, through the demands of a senseless fashion, entailed upon our race.

THROAT AND LUNG DISEASES.—Most of the throat and lung diseases, which indirectly lead to consumption, are occasioned by sheer carelessness. A delicate woman often sits for two or three hours in a crowded theater or church, breathing an atmosphere tainted by the exhalations from the lungs of hundreds of other people, her system is exhausted, her skin is excited by unwonted action, and when she leaves the building and goes out into the cold air her blood is suddenly driven to the interior of the body, and then ensues a more or less permanent congestion or inflammation of some of the internal organs—usually the air tubes in or leading to the lungs. This process being repeated many times, a chronic bronchitis is finally established in persons otherwise healthy, and life is ever after rendered miserable by this periodical overheating and sudden chilling of the body, even if the more dangerous malady, consumption, does not interfere, and put the abused body into the grave.

USEFUL REMEDY.—On good authority it is promulgated abroad that two drops of turpentine oil in a little milk is a complete antidote to phosphorus poison. Children not unfrequently bite off the charged end of phosphoric matches and swallow them. It is stated that a girl was recently saved in England by this newly discovered remedy, who had actually eight match ends in her stomach.

Critical Periods of Human Life.

From the age of forty to that of sixty a man who properly regulates himself may be considered in the prime of life. His matured strength of constitution renders him almost impervious to the attacks of disease, and all the functions are in the highest order. Having gone a year or two past sixty, however, he arrives at a critical period of existence; the river of death flows before him, and he remains at a stand-still. But athwart this river is a viaduct called "The Turn of Life," which if crossed in safety leads to the valley "Old Age," round which the river winds, and then flows beyond without a boat or casway to effect its passage. The bridge is, however, constructed of fragile materials, and it depends upon how it is trodden whether it bend or break. Gout, apoplexy, and other bad characters, are also in the vicinity to waylay the traveler and thrust him from the pass; but let him gird up his loins, provide himself with perfect composure. To quote a metaphor, the "turn of life" has a turn either into a prolonged walk, or into the grave. The system and power having reached their utmost expansion, now begin either to close, like flowers at sunset, or break down at once. One injudicious stimulant, a single fatal excitement, may force it beyond its strength; whilst a careful supply of props, and the withdrawal of all that tends to force a plant, will sustain it in beauty and vigor until night has nearly set in.

A REMEDY FOR BALDNESS.—The bald may now take courage and smile at the frequent summer fly. It is no new lotion that is to bring back the hairs of their youth and innocence, but a system of planting hairs in the smooth skin of the head, exactly as cabbages are set out in the garden. A discoverer, whose name cannot be long concealed from a grateful world, has invented a plan of replanting the hair where it is lost. As plants grow so does the hair. It is rooted and thrives like a vegetable. The operation of restoring hair is very simple: put healthy hairs into the eyes of needles and draw the needles through the upper skin, the epidermis; being drawn through, the hairs are left in the skin, as a thread may be left in any material by a stitcher. The roots, which have been extracted with their bulbs complete, are brought under the epidermis. The surface so operated on is protected at first by a linen band, but the hairs soon take root, grow, and flourish. It is not stated whether having the skin punctured in this way is disagreeable, and how often it is fatal. If it is a success, the plan has many advantages; one can have any color of hair he may elect, and he can plant a variety of colors, and thus make his appearance striking and beautiful.—*Hartford Courant.*

A GOOD REMEDY FOR A COUGH.—Take a handful of hops, put it in to three pints of hot water; let it boil one-half hour, or until the strength is out. Then strain, and add one and one-half cups of best kind of molasses, and one cup of white sugar. Then boil down slowly in a bright dish, or enamelled kettle, to about one quart. Then bottle up, and it is ready for use. Drink a little when you cough.

Suitable Dresses.

As for dresses suitable to certain persons, I need say but little. There are many books on the etiquette of dress, showing what is proper to be worn in the morning and in the evening and at noonday. A few very simple rules will suffice here. Those who are very stout should wear nothing but black; those who are very thin should put a little padding in their gowns; and neither should be in the least décolletée. Perpendicular stripes in dresses give height, and increase fullness, and are therefore particularly suited to very slight, small people, and particularly unfitted for stout figures. To fair persons, blue is becoming—but not every blue. Dark blue, or two brilliant a blue, is extremely unbecoming to that kind of complexion, and makes the skin yellow and the hair sandy. It is the old, pale, dull blue that really makes sand gold. Pink, especially the old-fashioned yellow pink, is, when not too brilliant, becoming to all complexions except that which goes with red hair. Light green may be safely worn by the very dark, the very rosy, and by the very pale when the skin is extremely clear; but to ordinary English faces it is a trying color, though there are people who look well in nothing else. Green, mixed properly with pale blue, is very becoming indeed. Gray is the most becoming for old and young—I mean the soft silver gray which is formed by equal parts of black and white, with no touch of mauve in it. It admits of any color in trimming, and throws up the bloom of the skin. Rose-color, for some people, is pretty, and not unbecoming. White, so disastrous to rooms, is generally becoming in dress—only very coarse complexions are spoiled by it. Short women should never wear double skirts or tunics—they decrease the height so much; unless, indeed, the tunic is very short and the skirt very long. So also do large, sprawling patterns used for trimmings. Let these be left to women tall enough to carry them off. Neither let a very little woman wear her hair half down her back; let her lift it clean up as high as possible.—*St. Paul's Magazine.*

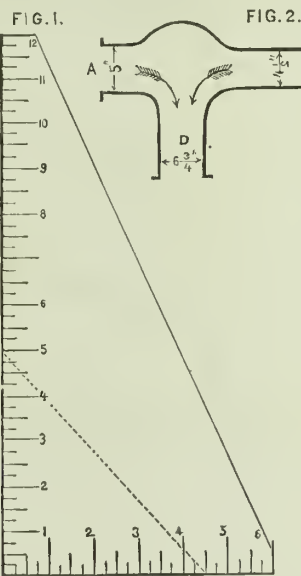
M. K. YOUNG, of Grant Co., Wis., has come to the conclusion that mules make the best farm teams, after having tried light and heavy horses.

USEFUL INFORMATION.

The Proportion of Pipes.

We subjoin a sketch of a handy little contrivance, designed by Mr. George Cockburn, pattern-maker, Glasgow, for ascertaining the diameter of a pipe, etc., having a sectional area equal to that of two other pipes, or vice versa. The instrument consists simply of a piece of wood on cardboard shaped like a set square, as shown in the accompanying diagram of the same form drawn on paper; and divided out along the two edges which are at right angles to each other, the divisions being taken to represent inches, feet, or yards, etc., according to the kind of work for which the instrument is used. When employed for determining the equivalent diameter of pipes or bars, inch subdivisions will generally be found most convenient.

The mode of using the instrument will be readily understood from an example. Suppose for instance that two pipes, A and B (Fig. 2) respectively 5 in. and 4½ in. in diameter, deliver into a third pipe, D, and it be required to find the proper diameter for the latter pipe. Then from 5 on the scale of one of the divided edges to 4½ on the other draw a line, as shown dotted in Fig. 1, and the length of this line measured with the same scale as that to which the edges are divided will be the diameter of pipe required, in this case 6¾ in. On the other hand, if a pipe, D, 6¾ in. in diameter, be delivered into a pipe, A, 5 in. in diameter, and it was required to know what other size of pipe, B, could also be supplied, all that would be necessary would be to take the division



point 5 on one edge as a center and with 6¾ in. as a radius, describe an arc cutting the other divided edge. The point at which the latter edge was cut by this arc would show the diameter of the pipe required.

Besides being useful for determining the diameters of pipes or circles of equivalent areas, the instrument is also available for determining the sides of equivalent squares, while by a little contrivance it can be made available for determining the diameter (or length on the side if square) of a pipe or bar having a sectional area equal to the aggregate sectional areas of any number of other pipes or bars of which the diameters (or lengths on side if square) are known. To use it for this purpose it is only necessary, first, to determine by its aid the diameter of pipe or bar equivalent to any two of the whole number, and next to ascertain the equivalent of the diameter thus ascertained, and that of a third pipe or bar, and so on. The arrangement of the instrument is, of course, founded on the fact that the areas of squares and circles increase as the squares of their sides and diameters respectively, and that the square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of its two sides.

MATTRESS MAKING.—Whether they are filled with hair, or flocks, or straw, the process is similar. They are made in a frame the sides of which are bored with a ½ in. bit about every 3 in.; same with the posts, so that they may be altered to make any sized mattress. If the mattress is for a wood bedstead, a square block is put in each corner of the frame, and the straw is rammed hard to it, so that the corners may be square, and fit the bedpost. For iron bedsteads, no corner blocks are used. A material called "farfar" is generally used for the upper and under sides, and for a better mattress brown holland. For the edges, bed ticking cut across the piece, and about 6 in. wide, will do. The tufting down is generally done by girls, on a table with laths for the top, so that the mattress needle, which is about 10 in. long, may be passed through.

INDIA RUBBER CARRIAGES.—A company is putting up a large factory in Fairfield, Ct., and will shortly engage in the building of carriages made entirely of India rubber, except in axles and tires. A decided superiority is claimed for the material over wood.

The manufacture of rails in this country has just doubled in the last six years.

Light in Darkness.

The *Paris Figaro* gives the following method of obtaining light instantly, without the use of matches and without the danger of setting things on fire: "Take an oblong vial of the whitest and clearest glass, put in a piece of phosphorus about the size of a pea, upon which pour some olive oil, heated to the boiling point, filling the vial about one-third full, and then seal the vial hermetically. To use it, remove the cork, and allow the air to enter the vial, and then recork it. The whole empty space in the bottle will then become luminous, and the light obtained will be equal to that of a lamp. As soon as the light grows weak its power can be increased by opening the vial and allowing a fresh supply of air to enter. In winter it is sometimes necessary to heat the vial between the hands to increase the fluidity of the oil. Thus preparing the vial may be used for six months. The contrivance is now used by the watchmen of Paris in all magazines where explosive or inflammable materials are stored."

THE STEAM SAND JET has been applied to new and important uses in Philadelphia, namely, wood engraving, the decoration of marble and the cleaning of brass castings. To engrave upon wood with the sand blast, it is necessary to photograph the object to be reproduced upon the prepared surface of the block, and this being exposed to the blast with certain precautions, is engraved in a few minutes. It is stated that specimen engravings are soon to be published, which will afford the public an opportunity of comparing the work done by the sand-jet with hand work. If the claims of those interested in the process are well founded, the introduction of the new system will greatly reduce the cost of wood engraving.

PURIFYING WATER.—It is claimed that metallic iron affords the readiest and simplest means of disinfecting water, and of keeping it fresh. The water of the Thames, taken to the sea in iron tanks, soon becomes perfectly sweet, and remains so during a long voyage. A small piece of iron or a few nails in the water in which cut-flowers are put will keep the water sweet. The experiment has been tried of putting some iron-fillings in a vessel with a very small quantity of water and then placing a leech therein. After six months had passed, the water was found quite fresh, and the leech alive and healthy.

Mechanical Hints.

TO RESTORE FURNITURE that has been marred or scratched:—Purchase one pound of beeswax, and scrape it into shavings in a pan; add half a gallon spirits turpentine, and one pint linseed oil. Let it remain twelve hours, then stir it well with a stick, into a liquid; while stirring, add one quarter pound shellac varnish and one ounce alkanet root. Put this mixture into a gallon jar, and stand it before the fire, or in oven, for a week, (to keep it just warm), shake it up three or four times a day. Then strain it through a half sieve into half and quarter pint bottles, corked and sealed with pretty label in front. Pour about a teaspoonful on a wad of baize, go lightly over the face and other parts of mahogany furniture, then apply a similar wad, dry briskly, and in three minutes it will produce a dark brilliant polish unequalled. This receipt is of great value.

ANOTHER PREPARATION may be made as follows:—Make a mixture of three parts linseed oil and one part spirits of turpentine. It not only covers the disfigured surface, but restores wood to its original color, and leaves a luster upon the surface. Put on with a woolen cloth, and when dry, rub with woolen.

TEMPERING SPIRAL SPRINGS.—Take oil and put it into anything you have of the size for dipping your job in, two inches deep, add water with about one ounce of common washing soda to the pint, about two inches deep. Have a tube to heat your springs in, or a better way, make the tube red hot and insert the springs, and when hot toss them into the prepared bath. Take carefully out and put into a tin. Cover with oil, and put over the fire until it boils and catches fire. It will first burn blue. Keep it there a few moments until it boils clear and bright; then slack down by plunging it into oil altogether. You will find them the right temper for springs for any purpose.

WATCH CLEANING.—A correspondent says:—"To clean a watch, even if it be of the lowest grade, the barrel or mainspring box should always be taken apart, the arbor and spring taken out and cleaned, fresh oil being applied before the cover is replaced. That there is nothing better than naphtha for cleaning purposes, is the opinion of most watchmakers. If the watch has a fusee, that also should undergo the same treatment as the mainspring box. The pivots also form an important part of the mechanism of a watch; and, to be examined as they always should be, necessitates the act of taking the watch apart. Such attention, no honest practitioners will overlook."

In the fourteenth century the average yield of wheat in Great Britain was only ten bushels per acre. Now lands in our older States have been reduced to about the same average, but the average of Great Britain now is about three times that amount.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR,.....W. B. EWER, A. M.
ASSOCIATE EDITOR,.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, March 30, 1872.

New Subscribers Wanted!

We wish to add 10,000 new names this year to our flourishing list of subscribers. There are 25,000 homes on this coast that ought to have the RURAL PRESS, and would have it, too, if fully advised of its value. We ask our present readers to help extend the circulation of our paper. Talk of it to your neighbors, show it to them, and point out the importance of its information. Send for free sample copies, and urge such as you believe would be benefited to subscribe for it.

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"Cost of Cultivating Ramie," etc., etc., Carmel Valley.

The foothills of the Sierras in Placer, El Dorado, and Amador counties, are green with thousands of acres of the best looking wheat in the State, whilst a great deal in the lower valleys is too rank for the season and will require to be pastured or mown off.

ALL permanent improvement to land will be found in lime and potash as a basis.

The Use of Sewage for Irrigation.

The city of Berlin, Prussia, has for a long time been considering the various methods of removing its refuse, etc., with a view to introducing the best process. Among other things it tried some experiments in utilizing the sewage for irrigation, and we propose to use freely Prof. Dunkelberg's article written on this subject for the *Cologne Zeitung*, as being of considerable interest both to people within and to those without the precincts of a city.

We omit the discussion of the question as to whether or no it is best to lead the matter from water-closets and other receptacles of human excrement into sewers. Many suppose that sewage without these excrements is worthless for agricultural purposes. That this supposition is wrong, is shown by V. Liebig's report to the Lord Mayor of London, in 1859. The analysis of water in which fish and certain vegetables (potatoes, cabbage and cauliflowers) had been cooked showed that in 472,768 tons of this water there were contained 414 tons of potash and 125 tons of phosphoric acid. If we take into consideration the immense amount of valuable matter sure to find its way into the sewers of large cities, we can see that by letting the sewage run away unutilized, whether or no the human excrements be carried off with it, there is a tremendous loss to agriculture. In the Berlin experiments the water from the sewer of the Königgrätz street was used to irrigate a sandy waste of about 4 acres. Part of this area was devoted to strawberries and other kitchen vegetables of various kinds and part was sown with grass. On the part devoted to grass it was necessary first to sow winter rye in order that the ground might be bound together; otherwise the water would have washed away grass, seed and sand together. The experimental irrigation was commenced on July 24th 1870, but was interrupted from October 2d to November 13th, and was continued for 81 working days of 20.3 hours (on the average) each, or 1642 hours. In this time about 1,436,000 cubic feet of water were used, equal to about 1½ inches (in height) per day.

The sewer water was of excellent quality and the rye grew luxuriantly, so much so, in fact, that although cut twice and in places three times, it prevented the growth of the grass, the seed of which was mixed with the rye. Hence no grass crop was obtained in 1870, and the winter irrigation had to be tried on rye land, which was less adapted thereto than is grass land. There was no help for this, one of the main objects of the experiment being to see whether winter irrigation was feasible in the climate of Berlin.

On the 1st of December, 1870, the irrigation was recommenced and carried on for 102 days at the rate of 2.165 inches (in height) per day. The result showed the feasibility of the plan, for notwithstanding the severity of the winter [unfortunately no data concerning the temperature are given] the ground was never frozen, and even where ice formed on its surface, the irrigation water flowed regularly beneath the ice and prevented the ground from freezing. For the sewer-water, on account of its formation and underground flow, can not get below the freezing point, and always showed at least one degree above the freezing point. The amount of this water obtainable for the experiments was very limited, and a large amount would have had a higher temperature. On account of an overflow from the Spree canal the pumping machinery was submerged and the irrigation stopped on the 15th of March for a considerable period.

The appearance of the field in March and April was not all that could be wished. In the upper part, which had received the most water, there were spots where the rye had been killed; between these places, however, individual bunches of (timothy) grass were in full growth. In other parts the rye had survived. The ground was then sown with grass seed (about 24 lbs. to the acre) and lightly harrowed with iron rakes.

In spite of the cold, unfavorable spring the young grass grew well and that sown the preceding year spread and flourished so luxuriantly that a crop of 8,280 lbs. were obtained from 2½ acres early in May. A second crop of 7,259 lbs. was obtained in June 2d to 11th. Both of these crops came from the seed sown the previous autumn, proof enough that the winter irrigation had not destroyed all vegetation as very many had predicted it would. On

the 25th day of June the third crop of grass was 18 inches high, the strawberry vines bore ripe fruit and the salad had been harvested and a crop of celery planted in its place.

To this may be added that a report of the 25th of August showed that the irrigated land had produced nearly 57 tons of grass in three crops while a fourth crop, only partially cut, had given 10½ tons more; that the strawberries (not including the many given away) had produced to the value of over \$2¼; the salad per square ruthe (about 153 sq. ft.) about 75 cts.; peas, 60 cts.; cauliflower, \$3¼; beans, 34 cts.; varieties of cabbage from 25 cts. to 50 cts.; another variety of bean, not yet fully gathered, 90 cts.; and that the part of the field harvested had been sown with another crop. The maize (a variety called "Giant maize" in Germany) had grown to the height of 9 feet. Table beets were in fine condition and sugar beets had a circumference of 21 inches.

Taking into consideration the many disadvantages encountered in the experiments, the results must be admitted to be very strong evidence in favor of the utilization of irrigation, both winter and summer, by sewage.

Where Our Garden Seeds Come From.

Few perhaps are aware of the fact that the United States do not supply our own home demand for garden seeds. It is not simply that California sends abroad for seven-eighths of the garden seeds required, but that the Atlantic States are large consumers of foreign seeds, imported principally from France, Belgium and Germany, and to the extent of over half of all the seeds used. That a country which can supply the world with an enormous surplus of grain and flour, should not raise its own garden seeds, is just what should set us looking about for a way by which over a million of cash that now finds its way annually to other countries can be kept at home.

Change of Seed.

It is the almost universal opinion among gardeners and grain growers, that a change of seed now and then is important, in order to keep certain varieties from "running out." But what are the facts in regard to this theory, in the countries that supply us with that change so eagerly sought for? They are these: that they never send to us or any where else for a change of seed, except to obtain some new variety which they have not; and the next is that they continue to cultivate in the same soil for an indefinite period, the same kinds of seeds without change.

Their Seeds are Improved.

Instead of deteriorating, their seeds are often improved by their method, and care bestowed upon their cultivation. The indiscriminate gathering of all the seeds produced by such vegetables as the beet, carrot, etc., is never practiced by the scientific culturist; but all inferior or imperfect seeds are wholly discarded, and none but the best are used for future propagation. In this way instead of their seeds "running out" they are running in, or improving; whilst the very reverse of this is often practiced by too many of those who grow garden seeds for profit regardless of quality, or their reputation as seedsmen.

Oregon Looming Up.

No longer that out of the way place on the face of the globe, Oregon, from the indomitable energy of her people and the grand system of railroads now being inaugurated and rapidly pushed from point to point in her wide domain, is, as a State, assuming an importance that cannot but attract the attention if not the envy of some of her older sister States. Her cities and towns have awakened to renewed life and activity, her population is rapidly increasing, and other evidences of a progressive and prosperous future, from this day onward are apparent on every hand.

A similar spirit of enterprise with like results, seems also to have seized upon the people of Washington Territory, where new and vast improvements are already in progress, that will have no relapse till a developed country and a mighty people be found where, and of which, but a few years since we knew but little more of, than as the great North West.

CLOVER as well as most grasses should be mown for hay while in bloom. The ripening of the seed takes all the starch and most of the nutritious substances from the stalk, and leaves it nearly valueless for hay.

How to Cultivate Vegetables.

EDITORS RURAL PRESS:—Myself and some of my neighbors have availed ourselves of your offer to furnish us Patent Office seeds free. On receiving them we find we need information about the value, uses and the mode of cultivating some of the less common varieties for this section. Will you run through your list from No. 1 up, giving some hints about them, and oblige one of your Sonoma county

SUBSCRIBERS.

In all cases we suppose your soil to be mel-low and fine; then cover all kinds of beet seeds one inch deep, if the soil be moist at that depth; but if not, then half an inch deeper. Carrots and Parsnips as shallow as possible and secure moisture enough to cause the seed to swell; usually from half an inch to an inch. Sow all kinds of turnip and radish seeds upon the surface and rake it in, or sow in drills and cover half an inch. Corn can be sown deeper, 1½ to 2 inches. Beans one inch. Peas the same. It is a very good rule to observe, in sowing small round seeds, and almost all flower seeds to cover them only 6 or 8 times the diameter of the seed; but always deep enough to secure moisture sufficient to make them vegetate.

In planting Lima beans or any beans of their flat shape, care should be had in not planting them too deep; the bean itself has to rise up to and above the surface, like melon seeds, after having first sent its roots downward; and when covered too deeply, it has difficulty in lifting the soil above, and many of them fail to reach the surface. We have thus found a sure way to get every bean up, plant by hand and place every bean-eye downward, and cover with not more than half an inch of light earth. Beans throw out no side root above the point where the bean is first planted in the soil, however much they may be hilled up; whilst corn will throw out side roots from every joint, hill up as high as you may.

Nature always deposits her seeds upon the surface, and this would be the best rule, if we were certain to secure them moisture; and next to this rule would be, to cover them as lightly as possible, say from half an inch to an inch in depth, depending on the size and strength of the seed.

The Thresher's Guide and Farmer's Friend.

The above is the title of a work by D. W. Holliman, soon to be issued from the press of Dewey & Co. It is probably the finest work of the kind ever printed, and will contain full and complete directions for the management of field threshing machines; the setting up of the same in the field, the care of every part of the apparatus; how to prevent accidents and delays, by pointing out the causes of the same; the application of horse and steam powers, and their management with full instructions for keeping all parts of a complete threshing establishment in perfect order, and at the least possible cost of time, labor and money. It will be a work so complete that every farmer who owns or employs a threshing machine, will find the purchase of a book a good investment.

Coal Ashes.

A subscriber asks if coal ashes are of any value as a manure for grass lands, or field crops.

Coal ashes contain no potash, and as this salt is what gives to wood ashes the principal value it has as a manure or fertilizing agent, it is not worth the cost to apply coal ashes to land. The only exception may be, when applied to stiff clays, its mechanical effect is then to loosen the soil, but other than this, adds nothing to its fertility. Wood ashes leached or unleached is a valuable fertilizer applied to any soil or crop, except where the alkali of potash is already abundant in the soil.

PEANUTS.—Editors Press.—Would you consider the climate and soil in the vicinity of Petaluma, favorable to the production of the peanut?

A rich, light sandy soil is the best; and the nearest approach to that, the next best, avoiding always, adobe or clay lands. The climate should be uniformly warm, but not necessarily dry. We believe a fair average crop could be produced in the climate of Petaluma and a favorable soil; occasional fogs would not seriously injure. Why not try a few rods of ground only, the first year.

A BUSHEL of plaster per acre sown broadcast over clover, will add from 30 to 100 per cent. to its produce.

Where Our Oranges Come From.

A few days since we received a call from W. H. Huber, of the firm of Childs & Co., orange and lemon growers of Los Angeles. From him we gather a few items in relation to the production of oranges, lemons, nuts, etc., in that land so beautiful as to be deemed a fitting home of the angels. The firm has between 400 and 500 orange trees, 18 years old from the seed, the trunks of many of them being 13 inches in diameter at the ground. One such tree has produced as many as three thousand marketable oranges in a single season, which alone demonstrates the profitability of this crop.

They have marketed since January of this year, over 300,000 in number, including oranges, lemons and citrons, in boxes of 225 to the box. It is not uncommon for trees to produce each a thousand oranges a year. They alternate between the bearing and non-bearing years; or on every alternate year the yield is double to that of the other; and this being the bearing year, they are enormously productive, but much smaller than last year, or than they will be next. The crop is uniformly certain, and there is an advantage in the orange over most ripening fruits in this, that they can remain on the tree for a whole month after ripening thus prolonging the season of marketing.

There are no two varieties in that county, all being seedlings and therefore no particular advantage in grafting the orange, except to bring it into bearing two years earlier than seedlings, which produce fruit in 7 or 8 years from the seed, but if grafted on the China lemon, will bear two years sooner. They have more than one variety of lemons, the Sicily being the best. They have between 300 and 400 walnut trees, of the same age, from which they marketed last September 5 tons of walnuts. They have Italian chestnut trees 30 feet high bearing large annual crops.

Girls in the Garden.

If there is any one thing more beautiful than another in a garden of flowers, that thing is a beautiful girl, with a sun bonnet on her head so wide and capacious that you have to get right square before her and pretty near her, to see the glowing cheeks that are sure to be there, if she is at all accustomed to garden walks and works. Physically, there can be nothing better for daughters, and, indeed, for many wives, than to take sole charge of a small flower garden.

The benefits derived from early rising, stirring the soil, snuffing the pure morning air, are freshness and glow of cheek and brightness of eye, cheerfulness of temper, vigor of mind and purity of heart. Consequently she must be more cheerful and lovely as a daughter, more dignified and womanly as a sister, and more attractive and confiding as a wife. If you have not the dooryard ground, then get a dozen pots and plant the seeds of flowers to your taste. The care and attention required to rear and train the growing plants, occupies the mind to the exclusion oftentimes of senseless novel reading, a senseless waste of time. You listless, pale-faced, fragile thing of a girl, throw off your mock delicacy, put on gloves if you will, but work in the flower garden, till your cheeks vie in color with the blush of the rose you cultivate.

California Butter Going to the East.

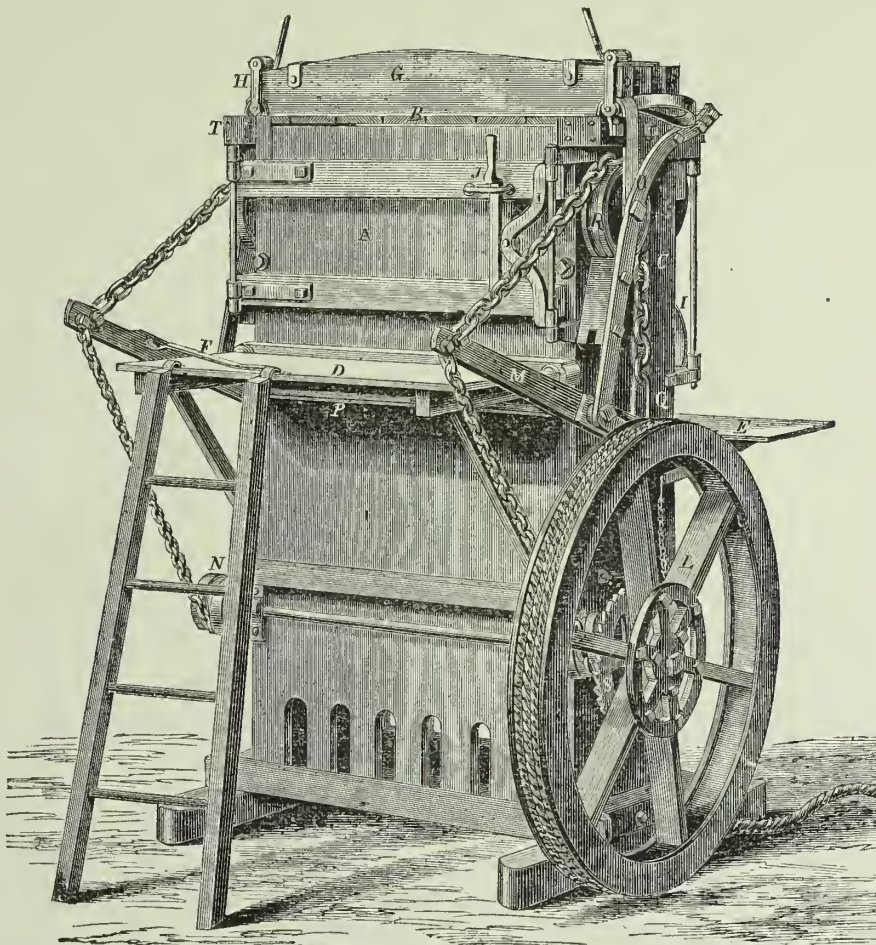
On the Saturday evening freight train of the Central Pacific Railroad there went forward a cargo of California butter—and invoice of 20,000 pounds—forwarded by Wooster & Shattuck, and consigned to John S. Martin & Co., and T. S. Doremus and Co., New York—to go through in sixteen days. This lot of butter is intended to show our Eastern friends that we have articles to export of which California has heretofore been a great importer, and the shippers have taken pains in putting up this lot of butter in a manner to do justice to the Point Reyes dairies. A small lot of butter—over 600 pounds—not at all to compare with this in quantity, was shipped a year ago, and then attracted a good deal of attention, winning favorable and lengthy notice from the *New York Tribune*. Our early spring enables our dairymen to enter the market a month earlier than can be possible for the dairymen in the colder climates on the other side of the mountains, and as our grasses at all times give the butter a better flavor than any Eastern article, it is expected that this shipment will result in a demand for more, or at least will check consignments to this side, now somewhat too numerous. Messrs. Wooster & Shattuck deserve credit for making this venture, and for the pains taken to increase the reputation of California as a producing State, able to compete with other localities in articles with which it was intended to overrun this market when the railroad was completed.—*Alta*.

The "Price" Baling Press.

We present to our readers this week an engraving of the "Price" Hay Press, a California invention of recognized merit and usefulness. We are aware that in so doing we are introducing an old friend and acquaintance to many of our readers, but trust that it will interest them none the less on that account.

The press was invented several years since in Petaluma, and for a long time was manufactured there; for that reason it is sometimes called the Petaluma Press. We are assured that this press is very rapid in its operations, frequently baling seventeen or eighteen tons per day, and turning out an average of twelve or fourteen. This seems to us pretty fast work, but the proprietors point to the significant fact that since its general introduction and use on this coast the price of baling has declined from \$2.50 to \$1.25 per ton. The press certainly appears to be a convenient and strongly made one, possessing the requirements of a good, portable baling press to an unusual degree.

The power is what is termed progressive—that is, the leverage increases with the same



THE "PRICE" BALING PRESS.

rapidity as the resistance of the substance being pressed, so that that horses have to pull no harder when finishing the pressing of a bale than at its commencement.

The entire height of the machine from the top down to the ground is utilized for the reception of hay, thus enabling the press to be made very low in proportion to its capacity.

The door fastenings (not like those shown in the cut) roll on and off their bearings, thus permitting them to be operated easily and without wear, under the immense pressure to which they are constantly subjected.

About two hundred and seventy-five of these machines have been sold on this coast, the demand increasing yearly. They are manufactured in this city by the "Price Press Co.," and sold by them at No. 17 Front street, San Francisco, and also at No. 11 J street, Sacramento.

WOODWARD'S GARDENS.—The late fine weather has added largely to the number of pleasure and health seekers at Woodward's Gardens. The latest attraction to this popular place of resort is several live alligators—two of which weigh 1,200 and 1,000 pounds respectively. One of these huge reptiles died on Friday of last week; but the other is still disporting himself in a huge tank, as such an amphibious monster should.

WHEAT, and indeed most grains, should be harvested, if possible, a few days before perfectly ripe.

Mechanical Genius.

A London critic of high literary attainment, speaks of Joaquin Miller as the "uneducated poet," declaring that the "poet was born in him, irrespective of the advantages of education to bring it out."

The same might be said of the mechanical genius of thousands of the boys of our land, including the "hoodlum" element. Much of true mechanical genius now lies dormant and may ever remain so, for the want of some system of encouragement, education or training, some little help to its development.

The State of Massachusetts ever awake to the importance of the education of her sons, is moving in the right direction, by instituting as a branch of her educational system, schools in which the poorer classes may be taught the rudiments of mechanical trades, with the view of drawing out anything like a latent genius, that may be slumbering in minds that but for help thus afforded, might be lost to themselves and to mankind.

Mechanical genius and invention is making rapid development in California as shown by

Animals and Implements for Japan.

On Saturday morning last, there arrived at Sacramento from the East, several car-loads of live stock, consisting of horses, cattle, sheep, hogs, etc., purchased for the Emperor of Japan. The stock was purchased by A. B. Capron, agent for the Japanese Government, at different points in the United States, and together with machinery, agricultural implements, buggies, wagons, etc., cost nearly half a million dollars. G. G. Mayo, a son-in-law of General Capron, the Superintendent of the Agricultural Bureau in Japan, is in charge of the stock, and will accompany it through to its destination.

The Following List

Will give some idea of the value of the stock and implements, which shipment is but a forerunner of the great trade that is to spring up between our Government and that of Japan:

A black stallion, seven years old, named "Young Black Prince." He was bred by W. L. Foster, of Dayton, Mich., and was purchased of A. H. Pidge, of New Carlisle, St. Joseph county, Ind.

A brown stallion, of Membrino stock, six years old, named "Don Juan"; purchased of C. C. and R. Parks, of Waukegan, Ill.

A pair of bay coach horses, of Membrino stock, 7 years old; purchased of S. S. Vaughan, of Jackson, Mich. One of them is half-brother to a celebrated stallion sold by Mr. Fisk, of Coldwater, Mich., to a Boston man, for \$12,000.

A brown gelding named "Stranger," intended for Mr. Capron's use; purchased from Dr. Johns, of Decatur, Ill.

A bull and three heifers, Durham stock; the former purchased of James Buckingham, of Zanesville, Ohio, and the latter of Walter Cole, of Batavia, N. Y.

Two specimens, Scotland stock, from the farm of J. H. Pickerell, of the same place.

Three Suffolk hogs, from John Wentworth's farm, Ill.

Three specimens of Lincolnshire sheep, from Walcott & Campbell, of York Cotton Mills, Utica, N. Y.

Three Southdowns, from Mr. Pickerell's farm, at Decatur, Ill.

Three Spanish Merinos, from the farm of Walter Cole, near Decatur, Ill.

In addition to the above, samples of wheat, barley, rye and oats, comprising in all about two hundred and fifty bushels, having been purchased and sent on.

From Elwanger & Barry, of Rochester, N. Y., thirty-six thousand fruit trees, and a large assortment of garden and flower seeds. They also send a German gardener.

Besides the above, there is an immense quantity of machinery and farming utensils. Five Americans will accompany the purchasers to Japan. Mr. E. M. Shelton, of Owosso, Mich., a graduate of the Agricultural school at Lansing, will have charge of the Farm Department, and will teach the Japs how to till the soil on the American system, and to raise cereals, etc. N. W. Holt, of Dayton, Ohio, is to superintend the erection of the machinery. George E. Mayo will have charge of the party between San Francisco and Yesso, and two men will be employed to assist in looking after the stock.—*Alta*.

The Wool Market.

We find the following in the *Ohio Farmer* of Mar. 9th: Things have been brought up standing at the East for the want of supply. The stock of fine domestic fleeces has been entirely consumed, and manufacturers can only stick their hands in their pockets and whistle for "something to do." The last lot of desirable wool of any considerable amount was taken at 95 cents per pound last week, and there is a good opening for other such sales if any party or parties can furnish the article. There is no stock of fine foreign wools in the markets and no prospect of receiving any at present, so buyers will be early in the field. Our advice to farmers is to keep cool, and sell understandingly, wool must bring a good round figure, and speculators will try and purchase large lots before the clips are taken off the sheep's backs. Indications now are that a starting figure will not fall much short of 75 cents per pound for good lots, to the producer.

COL. BLACK'S PORTRAIT, as recently published in the Press is alluded to by the *New North West*, of Deer Creek, M. T., as follows: Now we are not acquainted with Col. Black—have never seen him, to our knowledge—but the illustration (although, of course, not a fine steel engraving), is certainly well executed, and up to the average of common wood engraving; and as for looks, if the Colonel is any better looking than that, he must without a doubt be the handsomest man in the Territory. The picture is decidedly good looking (as any one can see by examining it), even as it now is, and it is very likely it falls short of the original in fine personal appearance; but we have not seen a handsomer face (among men) in Montana than this same picture indicates. The editor of the *Gazette* must be a little jealous; certainly nothing else could ever induce him to attempt the demolition of so fine a likeness.

At the recent Wine Growers' Convention in Sacramento, it is said by competent judges, that the most delicate wine offered for examination, was made at Coloma, El Dorado county.

The chopping or grinding of grain to be fed to stock effects a saving of at least 25 per cent.



Who would be a Farmer's Wife?

[Written for the Press.]

If it be our desire and pleasure that farmers communicate their thoughts to their brother farmers, through the columns of the Press, upon subjects that pertain to the advancement of their great profession, how much greater pleasure must we feel, when the loved and gifted wife of the farmer, lifts the burden of the Pen from the weary hand of the husband, and delights us, and all of us, with so much of truthfulness, and so well told, as in the following?—

I would be a Farmer's Wife.

EDITORS PRESS:—In reading your very valuable paper I have often noticed the injunction, "Farmers, write for your paper," and have always mentally responded,—that does not mean me, for I am only a farmer's wife. But as my husband now in the busy season cannot find the time when he is too much exhausted by labor to comply with the request, he has desired me to be his proxy and therefore I make my bow. There is one subject that being a farmer's wife, interests me very much, that I think I have never anywhere seen treated in the manner that has been suggested to my mind, viz.: The education and accomplishment of farmer's wives and daughters.

It seems to be almost an established fact among the mass of all classes, that a lady who can teach school, teach music or play the piano or organ for the pleasure of herself or friends, paint, draw, etc., and especially if she can write for publication, "why, surely she is unfit for a farmer's wife. She would not do in the country at all! She belongs in the city. She would never be contented elsewhere." Now with all due deference to public opinion, allow me to inquire why not? Why may she not find her sphere and therefore her happiness on the foundation where all other interests must build their superstructure, a farm, happy herself and making her home the center of attraction to which all her household turns lovingly. Yes, I anticipate the reason that has been so often given. "She has spent her whole life in such things, education and accomplishments, and knows nothing about work, much less the tiresome drudgery of a farmer's life."

No doubt sometimes true, but oftentimes very unjust to many women, whose natural love of employment and desire to excel, with an untiring thirst for knowledge has been the cause of their acquiring their education, and thereby a competency if need be, often consuming in that, no more time at least than their more indolent and showy neighbors do in giving their extra time and money to their more elaborate toilets. The same disposition that made their acquirements so commendable when directed to study, will often enable them to do equally as well, when in a home of their own, and they have the double incentive of their own and a beloved husband's happiness at stake in making home attractive. There is no earthly reason why she should not make a good loaf of bread, or wash or iron oven though she can charm with music or paint a picture.

Others may tell why farmers' wives and daughters should not be accomplished, it shall be my aim to tell why they should. In the first place I believe that they and their families need it more than those living in town. They labor harder and are thrown more entirely upon their own resources for relaxation and amusement. Let the husband and father come in from his work at night, often too much exhausted to read, only wishing for something to make him forget his weariness, how it soothes and refreshes them all to have wife or daughter able and willing to sit down at the instrument and play and sing a little while till he soon forgets how tired he was and joins the song thankful that music has such power to drive away care.

You will I trust pardon me if I here refer to the pleasure I used to experience, when my own dear father, coming in so tired, he felt neither like reading or talking, would say "come, Minnie, open the

instrument and let's see if that will not rest me a little," and before I stopped playing he always, and usually my mother and only brother, joined in the singing, and all felt and slept better for a pleasant evening. That was in the old Green Mountain State, but the memory of the happiness that I experienced, that I was thus enabled to add my mite to smooth the arduous labor, is one of the sweetest of my girlhood.

If ladies would cultivate this talent for the enjoyment of the loved ones at home more, and for the outside world less, it would much enhance its value as an attraction for the farm. Do not consider it too much trouble to hunt up the music only to please brother Fred or Frank, or to stop a piece of sewing just in the wrong place, because no one but husband or father desires us to play. They are the ones to stop for. They make our happiness, and we in a measure make theirs, and although it is very gratifying to them as well as to us, to be able to agreeably entertain our friends when they visit us, yet we should not consider it worth half so much to us, as to be able to furnish amusement at home, so that the long evenings in winter or in rainy weather they may feel it a much more inviting place, than going to town to pass away the time.

Some think a woman will not do so much work if she stops to play occasionally, as one man remarked he "did not think it was enough for a woman to work as many hours as a man," but I beg leave to differ with him on both points. Woman is man's helpmeet or should be, but the Bible does not require her to do more than the man. Also I disagree with them on the first part, for when I get all tired out, worried and perplexed, there is nothing that places me on the working list so quickly, all going smoothly, as to sit down and play two or three pieces, perchance only one grand old hymn, and then back to getting dinner again. That is my experience, and there is no place on all the list of homes, I would as lief call mine, as to be the wife of an honorable, intelligent farmer. MINNA FISHER.

Binghamton.

Neatness.

In its essence, and purely for its own sake, neatness is found in few. Many a man is neat for appearance sake; there is an instinctive feeling that there is power in it. When a man consults a physician or a lawyer for the first time, or comes to rent a house, or borrow money, he will come in his best dress; a lady will call in her carriage. A man who means business and honesty comes as he is, just as you would find him in his store, his shop, his counting-house. The most accomplished gamblers dress well; the most enterprising swindlers are fantastically clothed; but countless multitudes are but whitewashed sepulchres. Too many "don't care, as long as it will not be seen." Washington Allston, the great artist, and accomplished gentleman, suddenly left his friend standing at the door of a splendid Boston mansion as they were about entering for a party, because he had just remembered that he had a hole in his stocking. It could not be seen or known, but the very knowledge of its existence made him feel that he was less a man than he ought to be; gave him a feeling of inferiority.

All persons are less careless of personal cleanliness and tidy apparel, they are infallibly and necessarily less of the angel, more of the animal; more under the domination of passion, less under the influence of principle. Said a poor servant girl: "I can't explain what change religion has made in me, but I look more closely under the door-mat, when I sweep, than I used to." Intelligence, culture, elevation, give purity of body as purity of sense and sentiment.

Where you see a neat, tidy, cleanly, cheerful dwelling, there you will find a joyous, loving, happy family. But if filth and squalor, and a disregard for the refining delicacies of life prevail in any household, there will be found in the character of the inmate much that is low, degrading, unprincipled, and disgusting. Therefore, as we grow in years, we ought to watch eagerly against neglect of cleanliness in person, and tidiness in dress.—*Hall's Journal of Health.*

When we look upon the trees for their strength and grandeur, do not despise the flowers because their fragrance is all they have to give.

The sea is infinite. It beats and will beat forever the pulses of the sky. God made the land and it was good; he made the ocean and it was grand.

A Hint for Young Mothers.

The three requisites for babies are plenty of sleep, plenty of food, plenty of flannel. The saying that man is a bundle of habits is as true of babies as it is of grown children. If an infant is accustomed from its birth to sleep from six o'clock at night till daylight, the habit of early sleep will be formed, and the mother may have all her evenings to herself. If the baby sleeps all night, a long morning nap will naturally come about dinner time, after which the child, except when very young, should be kept awake till six o'clock. Perseverance in this routine will soon result in securing quiet evenings for both child and parent. Some mothers have a long season every morning and every night in getting the baby asleep. They rock them and sing them till Morpheus enfolds them. With most children this is entirely unnecessary. An infant can be accustomed by a few days training to go to sleep itself for a morning nap as well as for the longer rest at night. A mother has duties to herself as well as to her offspring. While she should exercise a constant care in securing its utmost physical comfort, she should secure rest and recreation for herself. In no other way can she keep fresh in feeling and buoyant in spirit. Nothing is so wearing as the unceasing tending of a fretful baby. Every means should be employed to aid the child in taking care of itself and giving as little trouble as possible. It may learn in babyhood to amuse itself with toys or by watching movements going on around it.

Fashion as well as good sense requires infant's dresses to be made with long sleeves and high in the neck. Fashion requires children of all ages to be warmly clad. Flannel should incase the whole body with the exception of the head and hands. The fruitful cause of colic in infants is the nakedness of their necks and arms. Regularity in feeding is as important as either of the other requisites. Babies cry as often from being overfed or fed too frequently as from hunger. Let the mother obey the dictates of common sense in this matter and not force food into a baby's stomach for every little complaint it makes. Children of three and four years old need much more sleep than they usually have. For irritable and nervous children sleep is a specific, and it can be secured to them only by the force of habit. Many light forms of disease may be cured by keeping a child in a uniform temperature, and in quiet. Let the young mothers who read this column experiment upon these few suggestions and we are sure they will have many an hour in the nursery for reading and thought.

About Children.

Dr. O. W. Holmes, in the February *Atlantic*, thus discourses about children: The Old Master, who is a bachelor, has a kindly feeling for this little monkey, and those of his kind.

"I like children," he said to me one day at the table. "I like 'em, and I respect 'em. Pretty much all the honest truth-telling there is in the world is done by them. Do you know they play the part in the household which the king's jester, who very often had a mighty long head under his cap and bells, used to play for a monarch? There's no radical club like a nest of little folks in a nursery. Did you ever watch a baby's fingers? I have, often enough, though I never knew what it was to own one." The master paused half a minute or so, sighed—perhaps at thinking what he had missed in life,—looking up at me a little vacantly. I saw what was the matter; he had lost the thread of his talk.

"Baby's finger," I interpolated. "Yes, yes; did you ever see how they will poke those wonderful little fingers of theirs into every fold and crack and crevice they can get at? That is their first education, feeling their way into the solid facts of the material world. When they begin to talk, it is the same thing over and over again in another shape. If there is a crack or a flaw in your answer to their confounded shoulder-hitting questions, they will poke and poke until they have got it gaping, just as the baby's fingers have made a rent out of that atom of a hole in his pinafore that your old eyes never took notice of. Then they make such fools of us by copying on a small scale what we do in the grand manner.

God has not left himself without a witness in every human heart. Even the professed atheist, while pretending to deny His existence, really fears His power to punish.

Be just, but trust not every one.

Young Folks' Column.

A Bad Practice.

"Tattooing done with India ink," is the sign of a New York firm, which makes a specialty of the business. It is a question whether it indicates progress to introduce Polynesian barbarism in this country.

It is not unfrequently the case that schoolboys occupy some of their spare moments in pricking India ink into each others' arms. It is a bad practice, boys. Very few boys, we believe, so employ their leisure; but still there is a period with many—which generally comes at the same time with the almost irresistible desire to "go to sea", or to go upon "the stage". A cross, a star, an anchor or perhaps the American flag, or the boys' initials—one or more of these are usually the chosen devices for indelible stamping.

This desire is most generally set up by some one who has a sailor friend or relation among his acquaintances. But boys, don't let your friendly sailor or your school set tempt you to disfigure yourself for life by tattooing so much as a single star on your hand or arm. We knew a boy who once proudly bore a decoration of this sort upon his hand. For a few months he was proud of it; then he was disgusted with it; as he grew older it became to him a curse, like the mark of Cain and finally he cut it out with a razor, leaving an unsightly scar, which, however, in his eyes was a positive beauty in comparison with the deformity it replaced. Boys! be wise.

Tit for Tat.

A woman was walking and a man looked at her and followed her. The woman said: "Why do you follow me?" He answered: "Because I have fallen in love with you." The woman said: "Why are you in love with me? My sister is much handsomer. She is coming after me; go and make love to her." The man turned back and saw a woman with an ugly face. Being greatly displeased, he went again to the other woman and said: "Why did you tell a story?" The woman answered: "Neither did you speak the truth; for if you were in love with me why did you go after another woman?"

FILIAL OBEDIENCE.—A boy was tempted by some of his companions to pluck ripe cherries from a tree which his father had forbidden him to touch.

"You need not be afraid," said they, "for if your father should find out that you had taken them, he is so kind that he will not hurt you."

"That is the very reason why I should not touch them," replied the boy. "It is true my father may not hurt me, yet my disobedience, I know, would hurt my father, and that would be worse to me than anything else."

Was not this an excellent reason?

WHAT LITTLE BOYS ARE GOOD FOR.—"Get out of my way! what are you good for?" said a cross old man to a bright-eyed urchin, who happened to stand in the way. The little fellow, as he stepped one side, replied gently:

"They make men out of such things as we are."

Some people do not like to have children about them. But who ever read of little folks bothering the blessed Jesus? He always had a place for children in his heart, and in his arms, and among his blessings.

WHEN IS MY TIME?—This question was asked by a bright little girl, who was fond of talking at the close of the day to a busy father. When is my time? The query will carry its own moral to every parent who reads this. Let fathers and mothers, whatever duties may seem imperative, find a "time" for talking with the little ones. Their time! Perhaps only fifteen minutes, but their time, exclusively and cheerfully. How many homes may be made brighter, and how many children counted as saved, if this advice were followed.

A LITTLE girl having noticed that after her mother's toilet there was invariably a sprinkle of powder on the carpet, observed, on seeing snow for the first time, "See, mamma, the angels have been using the *poudre de riz*!"

COWARDICE asks: "Is it safe?" Expediency asks: "Is it politic?" Vanity asks: "Is it popular?" but Conscience asks: "Is it right?"

DOMESTIC ECONOMY.

Food, and How to Use It.

Good cooking requires not only a certain amount of chemical knowledge, but also a considerable acquaintance with the chemistry of the stomach. The following article from "Good Words," is evidently the production of an expert, and will, no doubt, be appreciated by all intelligent readers:—"Potatoes, which are a dearer food than meat for the supply of flesh are far cheaper as a source of heat to the body, so with this view we associate them in our meals. Cheese gives us cheap flesh but dear fuel, so we take it with bread, which supplies the latter economically. Potatoes lay on flesh at an extravagant rate, so with potatoe soup we mix peas, which add to its nutritive value and to their economy. The making of palatable mixtures of various kinds of food forms the art of cookery. It is a maxim as old as Hippocrates, that "whatever pleases the palate nourishes," and it is only when taste becomes depraved by indulgence that the pleasure of eating becomes contemptible.

The Value of Lumps in Soup.

Many dishes of the cook are full of scientific significance. As an illustration let us ask, why are small square pieces of bread fried in lard, sent up with vegetable soup? Because starch requires to be mixed with saliva before it is converted into sugar in the act of digestion, and as the soup would pass to the stomach without mastication, or hard bread protected from the water by fat, so as to prevent its softening, is taken along with the soup, and compels mastication and a flow of saliva. But if cooks exhibit important scientific applications, they often err from ignorance of science.

Cooking Meats.

All the tasting ingredients of flesh reside in its juices and not in the solid substance. If the flesh of a deer, an ox, a pig, a cat, or a fox be well squeezed, so as to express their juices, what remains has the same vapid taste for all of them. For this reason roasted or stewed meat is generally better flavored than boiled, and the cook protect the juices by pouring melted fat over the joint during its roasting. In boiling meat for soup, cold water should be used at first, so as to extract as much of the nutritive juices as possible, and the heat be raised gradually. But if the meat be wanted in a boiled state for itself and not for its soup, then it should be plunged at once into boiling water, and kept boiling for a few minutes, so that all the outer albumen may be coagulated, in order to imprison the sapid and nutritive juices; then cold water should be added till the temperature is reduced to 160 degrees, at which it should be kept till the cooking is completed, because that heat is necessary for the coagulation of the coloring matter of the blood. In all cases, no more heat than is sufficient should be employed in cooking. Thus, in making soup, all the fire in the world will not make the water hotter than its boiling temperature, at which point it can be retained by a very moderate expenditure of fuel. Violent ebullition, such as we cooks often practice, while it does no good, does much harm, not only by wasting fuel, but also by carrying off in the steam much of the aromatic and volatile ingredients of the food.

Hard and Soft Water.

The effects of hard and soft water in cooking vegetables vary materially. Peas and beans cooked in hard water, containing lime or gypsum, will not boil tender, because these substances harden vegetable casein. In soft water they boil tender and lose a certain rank, raw taste which they retain in hard water. Many vegetables (as onions) boil nearly tasteless in soft water because all the flavor is dissolved out. The addition of salt often checks this (as in the case of onions) causing the vegetables to retain the peculiar flavoring principles, besides much nutritious matter which might be lost in soft water. Thus it appears that salt hardens the water to a degree. For extracting the juices of meat to make a broth or soup, soft water, unsalted and cold at first, is best, for it much more readily penetrates the tissues; but for boiling meat where the juices should be retained, hard water or soft water salted is preferable, and the meat should be put in while it is boiling so as to seal up the pores at once.

Tea and Tea Mixes.

In choosing teas the first precept to be borne in mind is to suit the taste of customers. Different portions of the country prefer different varieties of tea, and even is this the case in different localities of the same section of country, according as the preponderance of the population is native or foreign born. Next to knowing exactly what is wanted is to discern the differences between the qualities of the samples. A good quality of tea will always feel to the touch firm, hard, crisp and weighty. Inferior qualities of tea are soft, spongy and bulky for their weight. A fine description of tea shows evidence of careful preparation. It is nicely rolled, delicately dried and when infused unrolls itself with freedom. New teas should show fresh and green from infusion. Old teas present a dark brown hue when infused, and the infusion a deep reddish color. The infusion should also be devoid of scum, which is evidence of an admixture of foreign substances. Evenness in size of leaf and absence of stalk is desirable for sake of style.

In mixing teas it is a well-known fact a change of character is effected as certain as is produced by chemical agencies by one body being brought into contact with another. Herein lies the success of the mixes. The following proportions constitute a good combination of teas to represent two varieties:

Oolong.....5 lbs.	Oolong.....5 lbs.
Japan.....1½ lbs.	Japan.....1 lb.
Young Hyson.....1½ lbs.	English Breakfast½ lb.
English Breakfast.....1 lb.	Orange Pekoe.....½ lb.

Of course it is not to be understood that the above proportions are never to be varied. These are only given as an outline on which to base the judgment of the readers of this article. The same class of teas may not always be obtainable, yet it is still possible to keep up the standard of the mix the year round—a stock sample being always kept on hand to test by. Always remember the foundation. If the mix is too pungent, modify it by lessening those qualities which produce such a result, and vice versa. After being mixed, the product should be allowed to stand some days before being offered for sale. In bulk they improve, especially if kept warm and dry. After mixing, store in canisters as tight as are obtainable. Do not mix on a damp or rainy day. Keep the mix as far as possible from fruits, spices and coffees. A cargo of tea imported into London was once destroyed by a few boxes of oranges being stored in the hold. It had entirely lost its own flavor, so that when infused it merely showed color, while the infusion was flavored, as with orange peel.—*Am. Grocer.*

Food Values.

Dr. James C. Jackson, Principal of the "Home on the Hillside," at Danville, N. Y., publishes this:

With us, as a people, bread and meat constitute the staff of our life, being eminently the staples of our food. Of the grain used, wheat ranks all the other grains in quantity used, as it does all of them in natural fitness. According to Liebig, Bousingault, and other chemists, 107 parts of wheat are equal to 111 parts of rye, 117 of oats, 130 of barley, 138 of Indian corn, 177 of rice, 898 of potatoes, and 1,335 of turnips. In making bread out of wheat after the form or manner which with us is almost universal, certainly quite common, we greatly deteriorate it, inasmuch as to make it less nutritious than it might be; but not only so, we make it noxious, thus disturbing those who eat in many instances, by causing severe irritation of their gastric nerves. In preparing wheat for cooking, the uniform practice is to separate the bran from the flour. When this is done, an analysis of these will show the harm of bolting. The principal solid constituents of the human body are fat, bone and muscle. I offer the following condensation of facts taken from a statement of a scientific gentleman, correspondent of one of the ablest and oldest papers in the State of New York.

1. *The Fat.*—Of this ingredient, 1,000 lbs. of whole grain contributed 38 lbs.; fine flour, 20 lbs.; bran, 60 lbs.

So that the bran is much richer in furnishing the materials of fat than the interior portion of the grain, and the whole grain ground together is richer than the finer part of the flour, in proportion to nearly one-half.

2. *The Muscular Matter.*—One thousand pounds of whole grain, and of the fine flour, contain of muscular matter respectively—whole grain, 156 lbs.; fine flour, 130 lbs.

So that the material out of which the animal muscle is to be formed, the whole meal of wheat contains one-fifth more than the finest flour. For maintaining muscular strength, therefore, it must be more valuable in an equal proportion.

3. *Bone Material and Saline Matter.*—One thousand pounds of bran, whole-meal, and fine flour, contain respectively—bran, 700 lbs.; whole meal 170 lbs.; fine flour, 69 lbs.

So that in regard to that important part of our food necessary to all living animals, but especially to the young during their growth, the whole meal is three times more nourishing than the fine flour.

Taking the three essential elements of a nutritive food thus existing in wheat, and comparing their respective amounts in the whole-meal and in fine flour, we find that, on the whole, the former is one-half more valuable for fulfilling all the purposes of nutrition than the fine flour. "It will not be denied," says Professor Johnson, "that it is for a wise purpose that the Deity has so immediately associated in the grain the several substances which are necessary for the complete nutrition as animal bodies. The above considerations show how unwise we are in attempting to undo this natural collection of materials. To please the eye and the palate, to sift out a less generally nutritive food; and to make up for what we have recourse to animal food of various descriptions. It is interesting to remark, even in apparently small things, how all nature is full of compensating processes."

FOR A MEAT PIE.—Cut up some pieces of good, tender raw beef or mutton, season with pepper, salt, and, if liked, one finely minced onion; boil a half dozen good-sized mealy potatoes, mash smooth and wet with milk enough to form a dough to make the crust; salt to please the taste, roll out full half an inch thick, and line a buttered dish large enough to hold the meat, lay in the meat, add a teacup of water, or less, if the pie is to be for a small family, then roll out a thick crust of the potato, covering the top of the pie at least an inch thick, and bake about an hour and a half.

EFFECT OF A CONTINUED BREAD DIET.—According to late experiments of Mayer, neither man nor dogs can be fed economically upon bread alone, an immense quantity of this substance being required to prevent the body from undergoing waste. By the addition of a small percentage of flesh, a much less amount of total weight of food will answer the desired object. A persistence in the bread diet causes the tissues of the body to become more watery, and the entire organization is less capable of resisting injurious influences. In experimenting upon different kinds of bread, Mayer found that white bread was taken up in the greatest amount during its passage through the alimentary canal; next to this, leavened rye bread; then the rye prepared by the Horsford process, and finally the North German black bread. With all these differences, however, the first kind is said to be less satisfying to the feeling of hunger than the other three, and to be more expensive in every point of view. Mayer does not admit that bran has the nutritious value claimed for it by many persons, since the nitrogenous compounds it contains are mingled with much non-assimilable matter.

ETIQUETTE AT TABLE.—Table etiquette should be founded in common sense, though it is not always so. Certain articles of food cannot be thoroughly enjoyed if eaten with the use of a knife, fork or spoon. Hence good usage has sanctioned the use of fingers in certain cases. While our ideas of propriety would be shocked at seeing one take the bone of a beefsteak or mutton-chop in his fingers, we are not at all horrified when the little bones of a bird are treated in that way, since the meat can only be obtained easily and enjoyed thoroughly by picking them. It is much the same with green corn. Though gnawing the corn from the cob is not an elegant operation for an outside spectator to witness, it is very satisfactory to the individual most interested. Indeed, so generally is it conceded that corn may be eaten from the cob, that silversmiths now make silver handles which are to be thrust into the large end of the cob and allow it to be held without soiling the fingers.

PRESERVING THE FLAVOR OF BUTTER.—The German *Agriculturist* says that a great portion of the fine flavor of fresh butter is destroyed by the usual mode of washing, and he recommends a thorough kneading for the removal of the buttermilk, and a subsequent pressing in a linen cloth. Butter thus prepared, is pre-eminent for its sweetness of taste and flavor, qualities which are retained a long time. To improve manufactured butter, we are advised by the same authority to work it thoroughly with fresh cold milk, and then to wash it in clear water; and it is said that even old and rancid butter may be rendered palatable by washing it in water to which a few drops of a solution of chloride of lime have been added.

DESTROYING MOLD IN CELLARS.—According to Dr. Weidhold, fungus growths in cellars may be combated either by burning sulphur or by pouring two parts of concentrated sulphuric acid over one part of common salt. In the first instance, sulphurous acid gas is produced; and in the second hydrochloric acid, by means of which the fungi are destroyed. It is sufficiently evident, however, that during this process all openings must be closed, so as to prevent any escape of the gas, and the greatest care exercised not to enter the cellar after the operation until it has been thoroughly ventilated.

TO KEEP FLIES FROM BUTTER.—The *Meridian Gazette* is responsible for the following: "An experienced housekeeper tells a cotemporary that flies may be kept out of the butter plate on the table, by the simple and novel expedient of planting in it a thin slice of bread, cut column-wise and inserted in a perpendicular position. Whether the bread scares the flies off or not the lady cannot say, but she declares it certainly keeps them away."

SHAVING SOAP.—Take 4½ pounds white bar soap, one quart rain water, one gill beef's gall, and one gill spirits turpentine. Cut the soap thin and boil five minutes. Stir while boiling, and color with half ounce vermilion; scent with oil of rose or almond. Fifty cents worth of materials will make \$6 worth of soap.

KEEPING SAUSAGE MEAT.—Cook fresh sausage as for the table without flouring it; then put it in thin layers in a sweet earthen or stone pot with gravy from running hot lard over each layer. It will be as good as when first made.

TO REMOVE TAN, FRECKLES, PIMPLES, ETC. To two gallons strong soap suds add one pint pure alcohol, and four ounces rosemary; mix them well together. Apply with a linen rag twice a day, until the object is effected.

OLD SHIPS.—There is a ship now sailing from Holland, built in 1598, when the Prince of Orange was fighting Philip II., of Spain, then at the zenith of his power. A few weeks since, in the *Boston Daily Advertiser*, there was a notice that the whale-ship *Rousseau* (one of Stephen Girard's ships, built at Philadelphia in 1801) was then undergoing repairs at New Bedford. Her planking is being removed, the first time for seventy years. The live oak timbers underneath are reported to be as sound as they were the day they were first put together.



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GET UP CLUBS.

Summary of Meteorological Observations in Montana.

Made at Deer Lodge City, M. T., by Grauville Stuart, during seven months of the year 1871. Latitude, 46° 26'; Longitude, 112° 40'; Altitude, 4,768 feet.

OBSERVATIONS.	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Barometer.	25.485	25.418	25.459	25.436	25.512	25.375	25.366
Monthly Mean.	25.485	25.418	25.459	25.436	25.512	25.375	25.366
Highest for month.	27.14	26.18	26.18	26.18	26.18	26.18	26.18
Lowest.	24.24	24.24	24.24	24.24	24.24	24.24	24.24
Thermometer.	63.8	66.0	62.6	56.2	41.0	26.1	16.0
Monthly Mean.	63.8	66.0	62.6	56.2	41.0	26.1	16.0
Highest for month.	96.0	97.0	102.0	87.0	78.0	63.0	49.0
Lowest.	26.0	26.0	24.0	24.0	13.0	26.0	26.0
Wind.	W.	N.W.	N.W.	N.W.	N.W.	N.E.	N.E.
Prevailing direction.	W.	N.W.	N.W.	N.W.	N.W.	N.E.	N.E.
Rainfall and melted snow during month in inches.	1.07	1.20	0.55	0.71	0.79	3.00	1.51
Snowfall during month in inches.					4.92	35.25	16.75

Barometer reduced to 32° Fah. Average for seven months. 25.455
Mean annual temperature at Deer Lodge for five years 42.5
Mean annual temperature of principal valleys of Montana. 48°

Following is the amount of snowfall in Deer Lodge:

30.25 inches in 1867-8.	Greatest depth at any time.	2 1/2 in.
18.75 " 1868-9.	"	"
20.33 " 1869-70.	"	"
43.73 " 1870-71.	"	"
70.42 " 1871-72.	(To Feb. 22, 1872.)	12 "

Average amount of rain and melted snow in Montana for four years. 12 "

Greater portion of Deer Lodge Valley bare of snow at date (Feb. 22). Stock doing well; but few head have died as yet, and spring seems at hand. This has been a severe winter in Montana. Considerable loss in Texas cattle in some localities, as they were driven in late in the fall and were thin in flesh. They could not stand the snow and unusual cold, coming as they did from a warm climate. Native cattle generally have done well. We are sure of an abundance of water this year, and the consequent yield of our placer mines will be very great. The mining season is expected to open about the 1st of April.

GRAUVILLE STUART.

Deer Lodge City, M. T., Feb. 22, 1872.

Meteorological Report, San Francisco.

For week ending March 27th, 1872.

Date.	H. B.	T. H.	R. H.	D. W.	F. W.	S. W.
Mar. 21, 30-22	50	83				
Mar. 22, 30-20	49	83				
Mar. 23, 30-07	50	83				
Mar. 24, 30-01	50	86				
Mar. 25, 30-00	51	86				
Mar. 26, 30-06	49	85				
Mar. 27, 29-54	52	100				

EXPLANATIONS.—H. B., height of barometer; T. H., thermometer; R. H., relative humidity; D. W., direction wind; F. W., velocity of wind; S. W., force of wind; S. W., state of weather.

FREE SEEDS.—As our advertisement stated, the quantity of seeds sent us from the Agricultural Department was limited. Therefore we only expected to send a few seeds of each kind—just enough to show their adaptability and to produce sufficient seed for further planting of the acceptable kinds. We regret to say we are now out of the most desirable kinds, and have been unable to fill some of the orders received. This will explain to some of our readers why they did not get all the kinds sent for.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., March 28.

FLOUR.—We note a fair local demand with a limited inquiry for export. Stocks of Oregon are heavy and still accumulating. Sales reported embrace 5,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 2,000 Oregon extra. We quote prices as follows:

Superfine, \$4.50@5.25; extra, in sacks, of 196 lbs. \$5.50@6.25. Standard Oregon brands, extra, may be quoted at \$5.75@6.25.

WHEAT.—The market is quiet but owing to light demand, prices have declined. Sales aggregate 20,000 sacks fair to choice at \$1.80 @2.00 per 100 lbs. Quotable at close at \$1.65 @1.95 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 9d. per cental.

BARLEY.—Market quiet. Sales embrace 15,000 sacks ordinary coast to choice bay, at \$1.35@1.50, which is the range at close.

OATS.—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.50@1.75 per 100 lbs. which is the extreme at close.

CORN.—Is quotable at \$1.50 for yellow and \$1.55 for white per 100 lbs.

CORNMEAL.—Is quotable at \$2.00@2.50 per 100 lbs. from the mill.

BUCKWHEAT.—Is jobbing at \$2.25 per 100 lbs.

RYE.—According to quality is quotable at \$2.25 per 100 lbs.

STRAW.—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN.—Selling at \$25.00 per ton from the mill.

MIDDLINGS.—For feed, are selling at \$30.00 per ton from mills.

OIL CAKE MEAL.—Steady at \$35 from the mill.

HAY.—Receipts have been fair, and prices at close are \$17.00@22.50 for fair to choice per ton.

HONEY.—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$1 per doz.

POTATOES.—Stocks are dull and nominal. Best Petaluma and Tomales are quoted at 60; Humboldt out of market. Range for best kinds is between 95@1.00, and 50@85 for common.

HOPS.—The range is 50@65c.

HIDES.—During past week 1,460 Cal. dry sold at 19@21 and 1,480 salted at 9@9 1/2c.

WOOL.—Prices are not yet established, receipts being too small. About 40,000 lbs. of spring and pulled arrived this week on the Orizaba, terms private. Prices are expected to start at 35@40c for Southern and 45@50 for Northern.

TALLOW.—Market firm at 8 1/2@9 1/2c. B. lb. SEEDS.—Flax 3c; Canary, 6@7 1/2c; Alfalfa, 16@20c; Mustard—California Brown, 3@6c; Cal. White 3 1/2@4 1/2c. B. lb.

PROVISIONS.—California Bacon 13@14c; Oregon, 13 1/2@14. Eastern do. 12 1/2@13c; for clear and 11c for sugar-cured Breakfast; Cal. Hams 14 1/2@15; Oregon, 15 1/2@16c; California Sugar-cured Hams, 16 1/2@17c; Oregon do. 17@18c; Eastern do. 17@18c; California Smoked Beef, 13 1/2@14c. per lb.

BEANS.—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.87 1/2@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.30@3.50; Navy \$3.50 per 100 lbs.

ONIONS.—Fair to choice, \$3.00@5.00 per 100 lbs.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Cal. Walnuts, 14@15 Hickory, 12c; Brazil, 16c; Chili Walnuts, 11c; Italian Chestnuts 25@30c; Eastern Chestnuts, 12@20c; French Almonds, 22@25c; Princess Almonds, 30@35c; Cocoanuts, \$5.00@6.00 per 100.

FRESH MEAT.—Market has been firm since last report. We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 11@13 per lb. do. 2d quality 7@9c per lb.; do. 3d do. 5@8c.

VEAL.—Quotable at 10@13c.

MUTTON.—5@6c. per lb.

LAMB.—Scarce at 12 1/2c.

PORK.—Undressed grain-fed is quotable at 7 1/2@8c. dressed, grain-fed, 11@11 1/2c. per lb.

POULTRY.—Live Turkeys, 20@22c. per lb.; dressed, 22@25c. per lb.; large Hens 8 1/2@9c. Roosters, \$8.50@9.00 per dozen; Spring Chickens, \$9.00@10.00; Ducks, tame, \$11.00@12.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME.—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50. English Snipe, \$2.00@2.50; Mallard Ducks, \$3.50@4.00; Small Ducks, \$1.50@2.00; Wild Geese \$3.00@4.00 per doz.

DAIRY PRODUCTS.—A new feature in the dairy business was the shipment of 20,000 rolls of fresh butter to New York, and another car load goes to-morrow for Boston. Fresh California Butter, common to good in rolls, is in heavy supply; it may be quoted at 20@26 1/2c; fancy dairies 27 1/2c; California firkin butter, 20@25c. Pickled, 18@20c. Eastern firkin, 20@25c. per lb.

CHEESE.—California, 15@17c. Eastern, 19c@22c. per lb.

Eggs.—California fresh, 35@37 1/2c. per doz.

LARD.—California 12 1/2@13 1/2c; Oregon in bbls. and kegs 12@12 1/2c; Eastern in cases 14@14 1/2c; do in tes. 11 1/2@12c. per lb.

FRUIT.

Tah. Oranges, M.	20 00@25 00	Bananas, B. bunch	2 00@3 00
California do.	12 50@35 00	Apples, eating, bx	1 50@2 25
Limes, M.	20 00@25 00	do cooking, bx	3 00@4 00
Australian, M.	1 00@2 00	Pears, B. box	1 50@2 00
Sicily do.	8 00@12 00	Pineapples	1 00@9 00
Cal. do.	2 50@25 00	Strawberries	20 27 1/2

DRIED FRUIT.

Apples, B. do.	6 1/2c @ 8c	Pitted, do B. do.	20 @ 22
Pears, B. do.	1 @ 9	Raspberries, B. do.	10 @ 15
Peaches, B. do.	1 @ 9	Black Figs, B. do.	7 @ 8
Apricots, B. do.	8 @ 8 1/2	White, do	15 @ 20
Plums, B. do.	5 @ 7		

VEGETABLES.

Cabbage, B. do.	2 @ 2 1/2	Marf. Squash, ton	6 @ 10c
Garlic, B. do.	1 @ 2 1/2	Asparagus, B. do.	6 @ 10c
Rhubarb, B. do.	5 @ 8	New Potatoes, B. do.	4 @ 5 1/2
Green Peas	5 @ 6	Tomatoes	4 @ 5 1/2

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Dealers report a fair inquiry for seasonal articles under this head.

BAGS AND BAGGING.—The market is active for most all kinds. Burlap sacks 17c; Flour sacks 10 1/2@10 3/4c. for qrs. and 16 1/2@16 3/4c. for hlfs. Standard Gunnies are nominal at 20@21c; Wool 75@80c.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12 1/2; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod in bundles at 1 1/2c @ 5 1/2c, and in cases at 9c; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$3 in

bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$13; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7 1/2c per lb.

NAILS.—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER.—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 per ream.

PAINTS.—Red and White Lead at 8@12 1/2c; Whitening, 2 1/2c; Chalk 2c; Paris White 3c; Ochre 3@3 1/2c; Venetian Red 3@5c; Litharge 9@11c. B. lb.

ICE.—Sales of China No. 1 at 8 1/2@9c. and No. 2 at 7 1/2@8c per lb; Simm, quotable at 7@7 1/2c in mats; Carolina Table, 10@11; Hawaiian, 8@8 1/2c per lb.

SUGAR.—We quote Cal. Cube at 12 1/2c; Circle A Crushed, 12 1/2c, and Granulated 12c; Yellow Coffee and Golden C. 10 1/2@11c; Hawaiian 7 1/2@10 1/2c as extremes per lb.

SYRUP.—Prices may be given as follows: 72 1/2c in bbls, 75 in hf bbls, and 80c in kegs.

SALT.—California Bay sells at \$5@14; Carmen Island, in bulk, \$14; Fine Liverpool, \$23.50 per ton; Coarse, \$18 @ 19.

SOAP.—The prices for local brands are 5@10c, and Castile, 12@13c per lb.

TEA.—We quote Young Hyson at 85@1.15; Gunpowder, 95@1.15; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in 1/2 lb. papers 37 1/2c@1.10; English Breakfast Souchong 45c @1.00; English Breakfast Congou, 50c@85c; Basket 60@70c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, March 28, 1872.

MISCELLANEOUS.	
Butter, Cal. fr. B.	30 @ 40
Pickled, Cal. B.	30 @ 35
do Oregon, B.	30 @ 35
Honey, B. do.	25 @ 30
Eggs, per doz.	25 @ 30
Lard, B. do.	18 @ 20
Sugar, cr. 7 lb. 100	10 @ 12
Brown, do, B. lb.	9 @ 13
White, do, B. lb.	12 @ 15
Sugar, Map. B.	25 @ 30
Plums, dried, B.	15 @ 30
Peaches, dried, B.	20 @ 30
Wool Sacks, new	6 @ 7
Second-hand do	6 1/2 @ 7

PRODUCE, ETC.	
Flour, ex. B. 50 lb.	65 @ 75
Superfine, do	60 @ 70
Corn Meal, 100 lb. B.	30 @ 35
Wheat, per 100 lbs.	60 @ 70
Oats, per 100 lbs.	25 @ 30

FRUITS, VEGETABLES, ETC.	
Pine Apples, B. do.	5 @ 10
Bananas, B. bunch	20 @ 30
Cal. Walnuts, B.	14 @ 15
Cranberries, B. do.	10 @ 15
Strawberries, B. do.	20 @ 30
Cauliflower, B. do.	10 @ 15
Pears, table, B. box	12 @ 15
Plums, Cherry, B. do.	6 @ 8
Oranges, per 100 lb.	20 @ 30
Lemons, per 100 lb.	20 @ 30
Limes, per 100 lb.	20 @ 30
Figs, dried, B. lb.	15 @ 20
Asparagus, wh. 10	12 @ 15
Artichokes, doz.	75 @ 100
Brussels sprouts, 10	12 @ 15
Beets, B. do.	10 @ 15
Potatoes, New B. lb.	5 @ 6
Potatoes, sweet, B.	5 @ 6
Broccoli, B. doz.	50 @ 60
Cauliflower, B. do.	10 @ 15
Cabbages, B. doz.	10 @ 15
Carrots, B. doz.	10 @ 15
Celery, B. doz.	10 @ 15

POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, B. do.	8 1/2 @ 9
Ducks, B. do.	10 @ 15
Tame, do, B. do.	25 @ 30
Teal, B. do.	3 @ 4
Geese, wild, pair	12 @ 15
Tame, B. pair.	25 @ 30
Hens, B. do.	10 @ 15
Snipe, B. do.	10 @ 15
English, do.	10 @ 15
Quails, B. do.	10 @ 15
Pigeons, dom. do.	10 @ 15
Wild, do.	10 @ 15
Hares, each	10 @ 15
Rabbits, tame, 1	10 @ 15
Wild, do, B. do.	10 @ 15
Squirrel, B. pair.	10 @ 15
Beef, tend. B. lb.	10 @ 15
Corried, B. lb.	10 @ 15
Smoked, B. lb.	10 @ 15
Pork, rib, etc. B.	10 @ 15
Chops, do. B.	10 @ 15
Veal, B. lb.	10 @ 15
Cutlet, do. B.	10 @ 15
Mutton chops, B.	10 @ 15
Leg, B. lb.	10 @ 15
Lamb, B. lb.	10 @ 15
Tongues, beef, B.	10 @ 15
Tongues, pig, ea	10 @ 15
Bacon, Cal. B. lb.	10 @ 15
Oregon, do	10 @ 15
Hams, Cal. B. lb.	10 @ 15

* Per lb. + Per dozen. + Per gallon.

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, March 28, 1872

IRON.—

Scotch and English Pig Iron, B. ton.	\$5.50	@	6.00
White Pig, B. ton.	45	@	50
Refined Bar, good assortment, B. do.	05	@	05 1/2
Refined Bar, B. do.	05 1/2	@	06
Boiler, No. 1 to 4	05	@	06
Plate, No. 5 to 9	07	@	08
Sheet, No. 10 to 13	05 1/2	@	06
Sheet, No. 14 to 20	06	@	07
Sheet, No. 24 to 27	06	@	07
Horse Shoes	7.50		
Nail Rod	10		
Norway Iron	8		
Boiled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5	@	6

COPPER.—

Sheathing, B. do.	24	@	28
Sheathing, Yellow	24	@	26
Sheathing, Old Yellow	24	@	11 1/2
Composition Nails	24		
Composition Bolts	24		

TIN PLATES.—

Plates, Charcoal, 1X B. box	12	@	—
Plates, 1 C. charcoal	10	@	10.50
Roofing Plates	11	@	00
Banca Tin, Slabs, B. do.	—		45

STEEL.—English Cast, B. do.

Drill	16	@	17
Flat Bar	17	@	20
Plough Points	3.75		
Russia (for mould boards).	12 1/2		

QUICKSILVER.—B. do.

LEAD.—Pigs, B. do.	05 1/2	@	06 1/2
Sheet	08	@	12
Pipe	9	@	10
Bar	08	@	09
ZINC.—Sheets, B. do.	10	@	10 1/2
Sheet	10 1/2	@	11
Barx, grade	5		

GLEN FLORA Stock Breeding Association.

Successors to C. C. & R. H. Parks, Waukegan, Ill. Organized under the laws of the State of Illinois.
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SHORT-HORNED CATTLE

Thoroughbred and Trotting Horses, Cotswold Sheep, Improved Berkshires, and Pure-Bred Poultry in Great Varieties.

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Complete, of all Machines in use,

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Sections from \$1.75 to \$2.50 per dozen.
Knives \$1.25 per running foot. 9v3-3m16p
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Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 542, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim. 12v3-3m

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STATE PREMIUM STALLION—YOUNG RAWLEY. This fine young Norman Stallion will make the ensuing season as follows: At Peter's Stable, Petaluma, every day from 8:30 A. M. to 4 P. M. At our ranch, near Liberty School House, daily, from 5 P. M. to 6:30 A. M. Single service, \$10, in advance; season, \$15, payable within the season, in U. S. gold coin. Season to commence April 1st, and closing July 1st. "Young Rawley" is a coal black, 17 hands high, is nine years old, and weighs 1650 pounds. He took the First Premium at the State Fair in 1868 and 1869, and in 1870, at Bay District Fair, San Francisco, for draft horses. Sired by "Rollins," he by "Robert Suscard," out of "Normandy." Imported from Normandy, France, by Erasmus Martin and Benjamin Gordon, of Ohio Landing, in N. Y. Feb. 1857. Dam—"Lady Jane Mares," by "Louis Napoleon," out of a Sherran Morgan mare. Good pasturage at \$2 per month, and due care taken to prevent accidents or escapes, but no liabilities assumed. A. & H. MILSEY, Prop'r's, Petaluma. 13v3-1m

PREMIUM DRAFT STALLION—YOUNG RAWLEY, JR. This fine young Norman and Eclipse Stallion will stand the ensuing season for a limited number of Mares, at Charles Hatzel's Ranch, Suscol Valley, Alameda county. Single service, \$10, in advance; season, \$15, within the season, U. S. coin. Season to commence April 1st and closing June 30th. "Young Rawley, Jr." is a coal black, 17 hands high, is four years old next May, and weighs 1500 pounds. He took the Premium for the best two-year old, at the Bay District Fair, San Francisco, for draft horses, in 1870; and at the Sonoma and Marin District Fair, Petaluma, in 1871, for the best three-year old draft. He was sired by the well known Norman horse, "Young Rawley." His dam, "Queen," was a thoroughbred Copper-Bottom and Eclipse. She took two successive sweepstakes Premiums at the Sonoma County Fairs. A. WILSEY, Proprietor, JOB PEASLAND, Agent. 13v3-1m

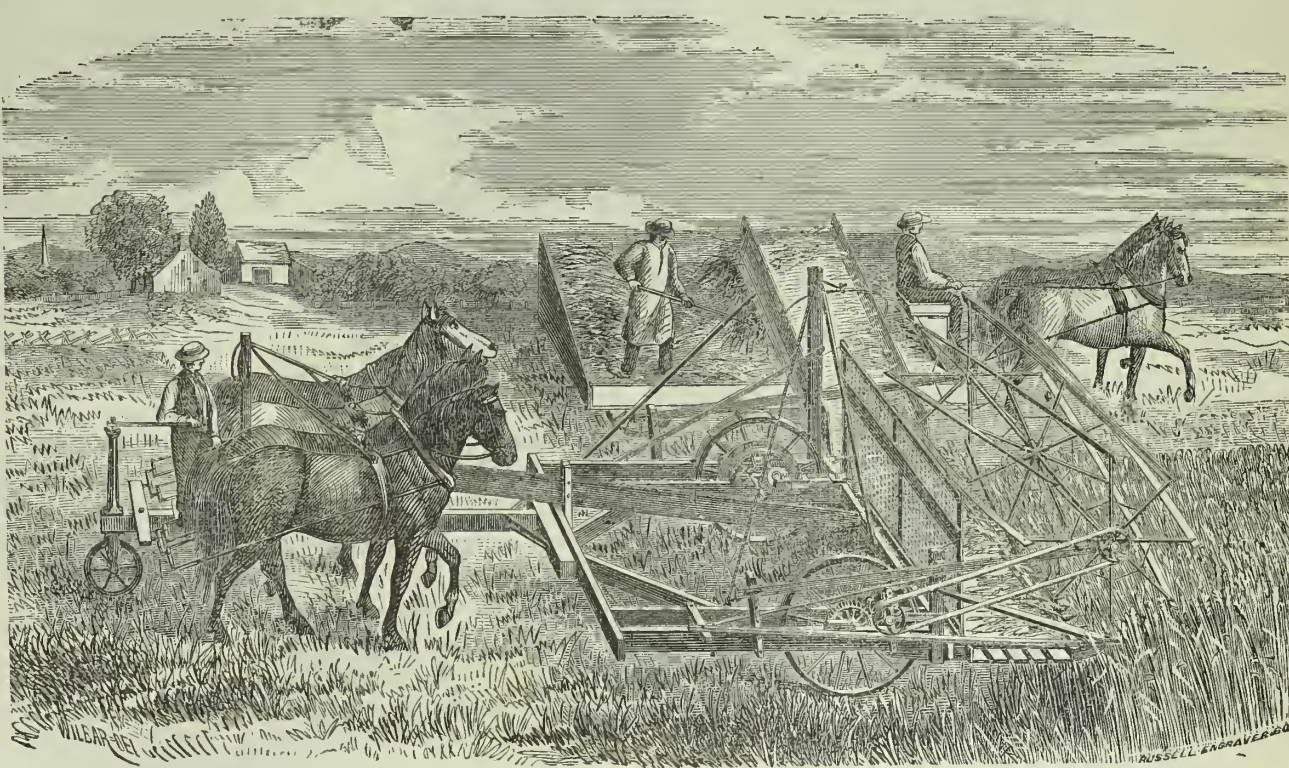
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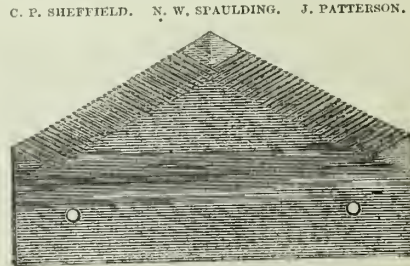
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Choice Roses and Pot Plants of every variety. Trees and Plants securely packed to travel any distance.

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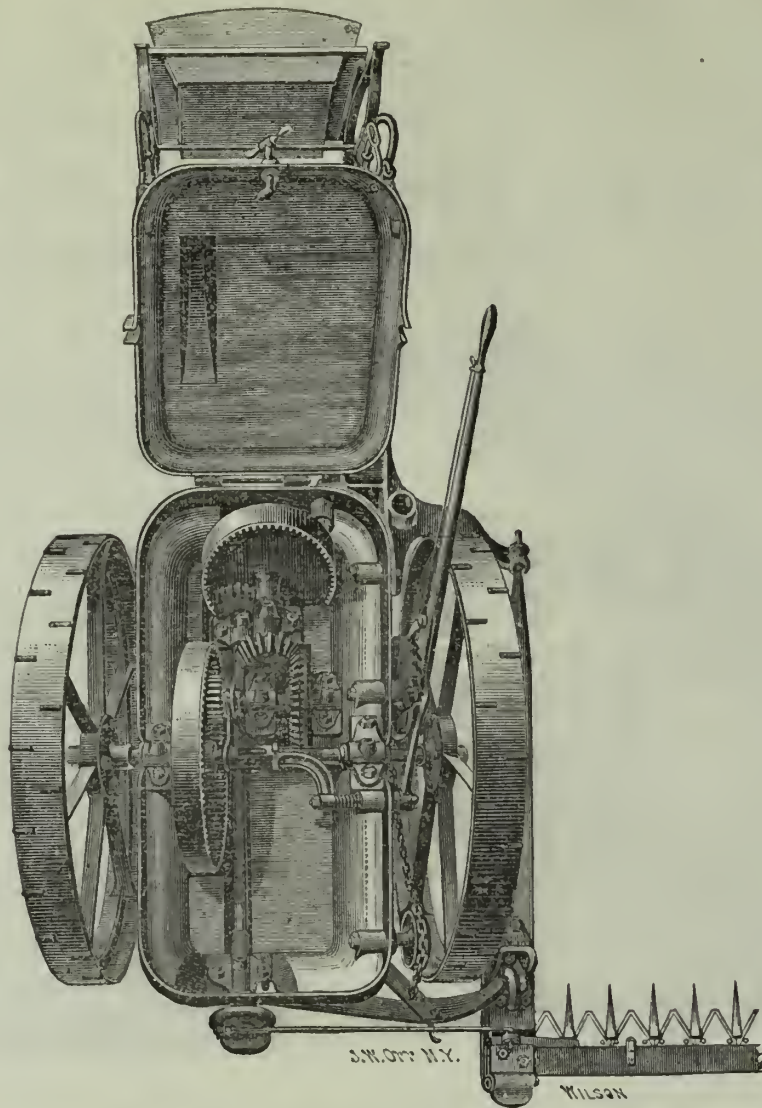
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6v3-2m

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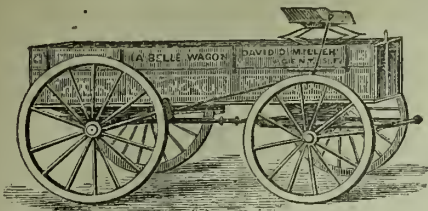
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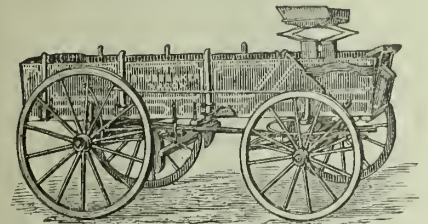
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Have become
The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
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AND EXCELLENT STYLE,
They Have no Peer.

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HEADER AND
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Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

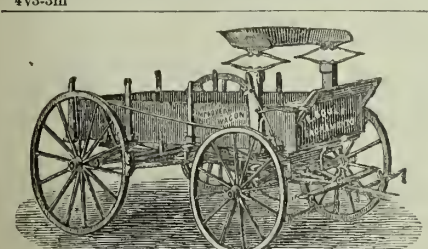
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As I make a SPECIALTY of the WAGON TRADE.
The attention of DEALERS is especially requested.
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This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to
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WHAT IS SAID BY THOSE WHO USE THEM.

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MESSRS. BERRY & PLACE, San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump, our company purchased of you, we would say in all sincerity that the pump has exceeded our expectation. It has been in use since the 25th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is SIMPLE, DURABLE, and PERFECT in its construction. We have found it entirely satisfactory and just the pump in every respect needed for our work.
Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

PHENIX MINE, Napa County, January 10th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump throws it all out of the main shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute. It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our company, as a reference, you are at liberty to do so. Very resp'tly, GEO. FELLOWS, Supt. Phenix Quicksilver M. Co.

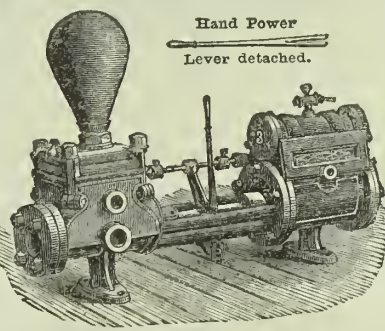
OFFICE STARR MILLS, VALLEJO, Cal., January 13th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommendations.
Yours, Etc., STARR BROS. & CAMPBELL.

OFFICE S. J. WOOLEN CO., SAN JOSE, January 29th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: We have used a No. 6 Blake Steam Pump now for about two years, both as a Tank Pump and as a Fire Pump in case of need: and it has given excellent satisfaction. It suits us in every respect.
Very respectfully, R. F. PECKHAM, Pres't San Jose Woolen Co.

BELMONT, Cal., February 6th, 1872.
MESSRS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of Berry & Place, by Mr. Ralston, I will say, that it gives ENTIRE satisfaction, even working as it now is, where no other Pump could; for it is at present six feet under water, yet it does its work PERFECTLY.
Yours, Etc., J. E. BUTLER, Supt. Water Works and Engineer at W. C. Ralston's.

BLAKE'S PATENT STEAM PUMP.

These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for nearly three years, and we are willing every one in use may be referred to; every Pump will speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows: Mining and Fire purposes; in Breweries, Tanneries, Sugar Houses, Factories, Mills, Laundries, and as Boiler Feeders, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the cheapest and best Pump that can be used. It is offered to the public as the most perfect independent steam Pump ever invented. Forty different sizes are made, capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to any class of work that may be required. Every pump will be warranted to perform the work required of it by the purchaser, or it may be returned and the money will be cheerfully refunded. The Blake Pump was awarded a silver Medal at the exhibition of the Mechanics' Institute, San Francisco, and State Fair at Sacramento, as being the best Steam Pump on exhibition. The agents have recently imported several of the largest-sized Blake Pumps for water works, and deep mines, and will be pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by TREADWELL & CO., Machinery Depot, old stand, corner of Market and Fremont streets, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.



It has no Cams or Rotary Complex Valves. It has stood the test wherever tested.

IT IS SIMPLE, COMPACT, DURABLE, AND POWERFUL.

Manufactured by Geo. F. Blake & Co., Boston, who build and have on hand a larger variety of Steam Pumps than any other concern in the country, embracing forty different sizes, and capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to every description of work required. Send for circular and prices.

The largest stock in the country at the Machinery Warehouse of

TREADWELL & CO.,

Manufacturers' Agents, corner Market and Front Streets, San Francisco.
Machinery Depot for Miners, Millmen, and Engineers' Supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics', Miners' and Farmers' Tools; Sturtevant's Blowers, Turbine Waterwheels, Etc., Etc.
6v24-cowbp

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

11v3-awbp G. W. DICKIE, CHAS. R. STEIGER, W. EPELSHEIMER, H. B. ANGELL, MELVILLE ATWOOD."

HAYWARD'S
COPPER-RIVETED
HORSE COLLARS.

Warranted never to break or give way at the Rim.

Go and look at them at the nearest Harnessmaker's or General Store, or send for a Circular to

J. C. JOHNSON & CO.,

104 and 106 Front Street,SAN FRANCISCO,

Dealers in Harness, Saddlery and Leather Goods of Every Description.
6v3-3m

AVERILL'S
CHEMICAL PAINT,

Of any desired Shade or Color,
Mixed ready for application, and sold by the gallon

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
Office, corner Fourth and Townsend streets, San Francisco. HELY & JEWELL, Agents.
15v23-3m

R. IRELAND,
The old Pioneer Broom Factory—Established August, '56. No. 82 J street, between Third and Fourth Sacramento. All kinds of

Wood and Willow Ware.
Manufacture of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubbs and Pails.
16v2-3m

CLABROUGH & BRO.,
GUNMAKERS,

89 BATH STREET, BIRMINGHAM, ENGLAND.

SAN FRANCISCO HOUSE—No. 630 Montgomery street. The only California House that are ACTUAL MANUFACTURERS.

We manufacture in England for our California trade, to the order of our resident partners, every description of

Sporting and Defensive Firearms.
Sporting Goods and Gunsmiths' Stock of all kinds constantly on hand, Wholesale or Retail. 3v3 3m

San Francisco Wire Works,
NO. 665 MISSION STREET,
Near Third Street.....San Francisco.

C. H. GRUENHAGEN & CO.

HILL'S PATENT
EUREKA GANG PLOW,



The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted.

They are of light draught, easily adapted to any depth, and are very easily handled.
They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

HILL & KNAUGH,
And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc. 16v23-tf

THE GREAT
RETAIL DRUG HOUSE

OF THE PACIFIC COAST!

JAMES G. STEELE & CO.,

Chemists and Apothecaries.

Import and sell directly from Eastern and Euro-Markets.

NO. 521 MONTGOMERY STREET,
San Francisco.

Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

— AND —
GRINDELLA LOTION,
For the Cure of Poison Oak.
10v3-3m

Pacific Oil and Lead Works,
SAN FRANCISCO.

Manufacturers of

Linseed and Castor Oils,
OIL CAKES AND MEAL.

Highest price paid for Flax Seed and Castor Beans delivered at our works.
Office, 3 and 5 Front street. 3v3-cow-ly
Works, King street, bet. Second and Third.

200 Davis Street, corner of Sacramento.

A. H. TODD,
COMMISSION MERCHANT.

DEALER IN
All Kinds of Grain and Produce.

Has on hand large stocks of Wheat, Barley, Oats, Corn, Bran, Flour, Middlings, Potatoes, etc.

SEED GRAINS, of all kinds, a specialty.
WHEAT—Choice Seed—Bay Coast, Australian, Chili, Sonora, and other varieties.
BARLEY—Coast and Bay, for Feed and Seed.

BALD BARLEY—Superior Seed for Hog Feed or Hay.
OATS—Norway and other kinds, selected and clean.
CORN—White and Yellow, Eastern and California.

In daily receipt of consignments of Hay, Straw, Poultry, Eggs, Wool, Hides and Tallow.

A. H. TODD,
Grain Dealer and Commission Merchant,

200 Davis street, N. E. corner Sacramento,
1v3-6m-cow SAN FRANCISCO.

KING'S NURSERY,

Elm street (between Telegraph Av. and Broadway sts.), Oakland.

Evergreen and Deciduous Trees, Shrubs, Roses, etc. 10,000 Eucalyptus (including Blue Gum).
30,000 Monterey Cypress, Pinus, Insignis, Lawson Cypress, Acacias in variety, Magnolia, Oleander, Orange and Lemon Trees, etc., etc., at Lowest Rates.

Orders attended to. Address
M. KING, Nurseryman,
Oakland, Cal.
7v3-2m

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England.
Also ten Rams, and thirteen Ewes and Lambs, Silesian Sheep.

Also five hundred Calves of the best milk stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats.
ROBT BECK, Secretary
5v3tf State Agricultural Society, Sacramento.



It is one of the Largest, best Illustrated and most Original and Entertaining Agricultural Journals in America, and has no rival on the western side of the Continent. Its circulation is Rapidly Increasing, and it is Very Popular with its Patrons.

A NEW HUSBANDRY.

as it were, is required on the Pacific Coast, on account of its peculiar seasons, soil, climate and topography. The new discoveries, ideas, and useful hints evolved in its rapid progress, are to be observed with interest, and read, as reported in the PACIFIC RURAL, with profit by practical and progressive agriculturists everywhere. Sample copies of the PRESS, post paid, 10 cts. Subscription, \$4 a year.

DEWEY & CO., Publishers,

No. 338 Montgomery St., San Francisco, Cal. Nov., 1871

DEWEY & CO.,

SCIENTIFIC PRESS

U. S. AND FOREIGN

PATENT AGENCY.



The principal Agency on this side of the continent. Established in 1860. Inventors can rely upon the surety and dispatch of all important and confidential business intrusted in our hands. Long familiarity with Mining, Farming, and all other classes of inventions on this coast, enables us to give the most intelligent advice to PACIFIC COAST INVENTORS of any Agency in the Union, and oftentimes save unnecessary delay and expense. Every branch of the patent soliciting business attended to. All worthy INVENTIONS patented by us will be liberally noticed, free, at the most desirable time for the patentee, in both the SCIENTIFIC PRESS and the PACIFIC RURAL PRESS.

Send for our 52-page illustrated PATENT CIRCULAR, mailed free on receipt of stamp. Also the U. S. Patent Law of 1870.

DEWEY & CO.,

No. 338 Montgomery st., S. E. cor. California st., diagonally across from Wells, Fargo & Co., S. F.

Fine Imported Poultry,

CONSISTING OF

Dark Brahmas,

LIGHT

Brahmas,

BUFF COCHIN,

PARTRIDGE

COCHIN

AND

Houdans,

Guaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal. Address W. FORD THOMAS, Custom House, SAN FRANCISCO.

WIRE,

All Kinds and Sizes,

For Fencing, Bailing Hay, Etc.

For Sale by—

A. S. HALLIDIE,

519 Front Street, San Francisco.

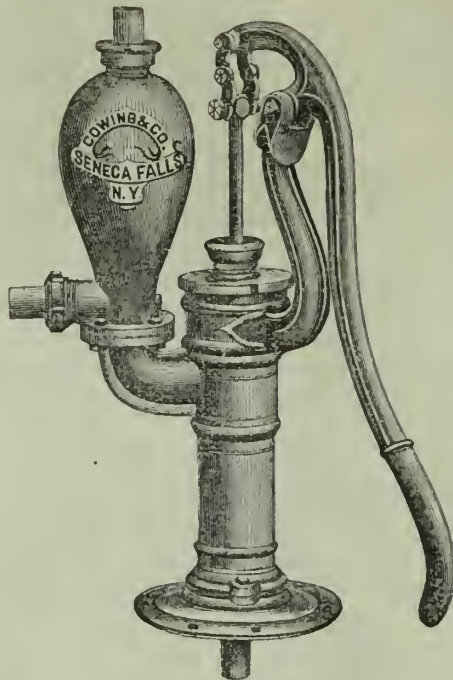
11v3-3m-16p

ACTIVE MEN!

With Experience in Canvassing business, can now obtain lucrative and permanent employment by DEWEY & CO., Patent Agents and Publishers of the SCIENTIFIC PRESS and the PACIFIC RURAL PRESS, No. 414 Clay street, S. F.

ALFRED S. MOORE & CO.,

428 SANSOME STREET,.....SAN FRANCISCO.



DURABILITY.

CHEAPNESS.

Importers and Dealers in

Iron and Brass Force and Lift PUMPS, Hydraulic Rams,

GARDEN ENGINES,

BUTCHERS' PICKLE PUMPS,

CHEAP DEEP WELL LIFT PUMPS,

DEEP WELL FORCE PUMPS,

BAILEY FEED PUMPS,

STEEL AMALGAM FARM BELLS,

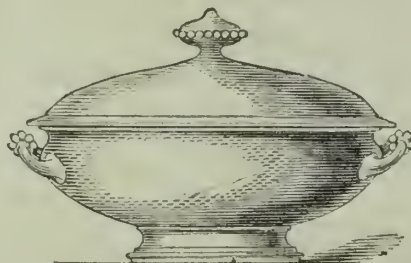
PIPE HOSE, HOSE PIPES,

COUPLINGS, ETC., ETC.

The above named goods are unequalled for finish by any others in the market, and the prices will compare favorably. For instance, the price of the Three-inch Force PUMP represented in the cut, with air chamber having two outlets, is FIFTEEN DOLLARS. Illustrated Catalogue sent upon application. Pipe cut to any required length, and estimates furnished. 13v3-1am-bp

HAYNES & LAWTON,

Importers, Jobbers and Retailers of



English and French China Dinner Ware, Foreign and American Glassware, Ivory-Handle Table and Dessert Knives.

ALSO,

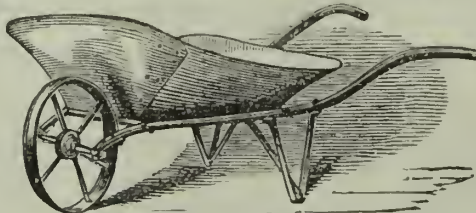
Manufacturers of Superior Silver-Plated Ware on White Metal.

MARKET STREET, UNDER THE GRAND HOTEL,.....SAN FRANCISCO, CAL.

4v3-1am3m

PATENT TUBULAR WHEELBARROWS.

These Barrows are the Frames being Tub-Wheels, etc., Wrought Strongest, Most Durable made. Over 1,000 are in are giving entire satisfaction wear or accident can be immediately du-



made entirely of Iron-ing, and the Trays, Iron. They are the and Economical Barrow use on this Coast, and faction. If from con-any part gives out, it plicated.

	TUBING.	WHEEL.	TRAY.	WEIGHT.
No. 1. Canal Size.....	16 inch.	16 inch.	36x32 inch.	58 lbs.
No. 2. Banded.....	18 "	18 "	38x44 "	80 "
No. 3. Banded.....	18 "	18 "	38x44 "	101 "
No. 4. Banded.....	18 "	18 "	40x48 "	116 "
Wood Barrows.....	16 "	16 "		64 "

MANUFACTURED ONLY BY

CALVIN NUTTING & SON,

417 and 419 Market Street, below First,.....SAN FRANCISCO.

We have been using the Tubular Barrows for two years, and for Economy and Durability they cannot be equalled. SAVAGE & SON, Empire Foundry. For Economy and Durability the Tubular Barrows cannot be excelled. Would not be without them. H. T. HOLMES & CO., Lime Manufacturers. fe10-2tbp

NORWAY Genuine Norway OATS! land, by one of the proprietors of this journal, can be had at this office.

TURKISH MUSKMELON. Keeps luscious all winter. First Seeds for sale in America. Post paid, with sample newspaper, 50 cts. Address PACIFIC RURAL PRESS, San Francisco, Cal.

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

6v2-1y-16p

GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

GEO. B. BAYLEY,

Importer and Breeder of

CHOICE POULTRY.

P. O. Box 659, San Francisco.

N. GILMORE,

Importer and Breeder of

Angora or Cashmere

GOATS

—OF—

PURE BLOOD

—AND—

ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

N. GILMORE,

El Dorado, El Dorado county,

California.

5v3-1f

EGGS FOR HATCHING

FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums

At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains; DARK BRAHMAS, Imported from England and Ireland; HOUDANS, direct from France; LA FLECHE, direct from France; SILVER SPANISH HAMBURGERS, (Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fino Layers; SILVER POLANDS, Non-Setters and Fino Layers; WHITE COCHINS, BUFF COCHINS, DUCK WINGED BANTAMS, GOLDEN SEABRIGHT BANTAMS, JAPANESE BANTAMS, HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffe-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager,

California Stock and Poultry Association.

OFFICE—No. 11 Leidesdorff street.

YARDS—Cor. Laguna and Washington streets.

4v3-3m-16p

California Sugar Beet Seed.

A lot of 600 lbs. (California raised) for sale. Address this office.

PURCHASERS please say advertised in Pacific Rural Press

PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, APRIL 6, 1872.

[Number 14.]

Fitch's Fence-Post Driver.

Passing the patent office of Wiester & Co. at different times, our attention has been attracted by the numerous models of different inventions exhibited in their show window. Having a little leisure the other day we stepped into their office, and through the kindness of Mr. Hicks, their gentlemanly clerk, we were shown a number of novel inventions, and had their various uses explained. The one represented in the accompanying cut we considered more than ordinarily useful, and this being the season for fence building, a description of it may be of interest to some of our farmers. The machine is built on runners so as to be easily drawn along the line upon which the posts are to be driven. The uprights, *B B*, and braces, *H H*, are hinged to the runners, and their inclination can be easily changed to suit either level or hilly ground. The hammer, *C*, is made of hard wood, with an iron rim at the base, and weighs about two hundred pounds. The tripping hook, *E*, and inclined surface, *F*, are the same as used on the ordinary pile-driver. The latch, *G*, is used to support the hammer while the post is being set or while the machine is drawn from place to place. The chain is used for measuring the distance between posts. The drop is raised by horse power, by means of a rope and pulleys, as seen. When the machine is to be moved the staple of the horse's whiffletree is attached to a hook at the forward end of the frame, and a graduated or measuring chain, seen attached to the rear ends of the runners, is passed around the post last driven, and the machine moved until the chain is tightened, when the distance of the posts one from the other is thus measured, and the machine is ready to drive another post. To hold the post, to be driven in place, two adjustable arms which hook into each other are attached to the yoke at the bottom of the uprights. Their form and operations are readily seen in the engraving. At the back of the uprights are diagonal braces, *H*, which are pivoted to the uprights at one end, and to the runners at the other. These lower ends may be advanced to or receded from the foot of the uprights, and secured to either one of the series of eye-bolts seen on the runners. This will allow the machine to work on uneven ground, or a side-hill, while the uprights will remain perpendicular.

It is claimed that a man and boy with one horse can drive posts as fast with this machine as four men can nail on the boards.

ALL highly concentrated animal manures are increased in value, and their benefit greatly prolonged, by the admixture of plaster or pulverized charcoal.

THE application of wood ashes will alone keep up the integrity of most soils, by supplying nearly all the organic substances needed.

Onion Culture.

A patron who does not wish his name to appear, asks us why his land will not grow good onions. That his land has been tilled for several years, and will grow any other crop put upon it; but that for two years he has plowed deeply and thoroughly his land—which is river alluvium—sowed good seed, that came up well, gave it good cultivation, but that three-fourths of his crop are "scullions" and wholly worthless; and that his neighbors tell him the ground is too rich.

We do not believe that river alluvium that

Peas and Almonds.

We are never remiss in urging upon our readers the propriety of a diversity of farm crops, instead of making the whole profits of a year a contingency resting entirely upon the success of a single production. We have an agent and correspondent, E. P. B., who has just forwarded to us a note or two of observation made of a farm in Harrisburg, Alameda county, known as Curtner's ranch, and one on which the principle of a diversity of crops is acted upon.

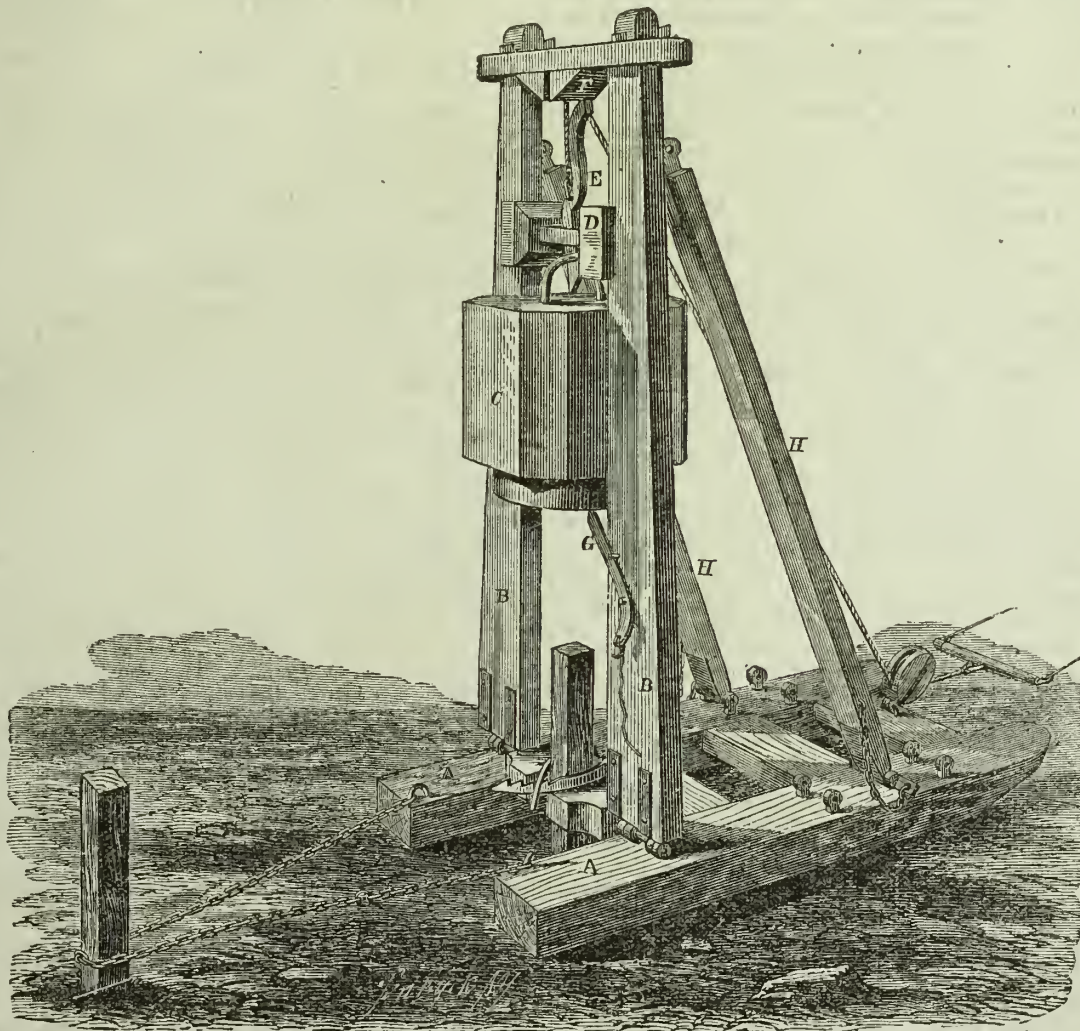
The farm contains 2,200 acres consisting of

Butter Going East.

The second consignment of California butter has gone to New York by rail. Now there are many in California who will be asking the reason of these shipments. Whether we here have a surplus, and the East a deficiency, or what are the causes that have brought about this new feature in the butter market. No one would ship butter to the East a second time, to lose money on it, if he knew it; and hence we suppose it to be a paying business. But large invoices of butter are constantly being received from Chicago and other places East, to supply a California demand. Nothing, then, but the superior quality of California butter sent East, could secure a sale there at paying prices, adding to its value here the cost of freight to New York. But it does pay to send it there; and as it costs as much to make it here as there, we can only conclude that the best California butter is equal to the best Eastern, and that simply means the best in the world. But there is something back of this that should at once engage the attention of dairymen generally throughout the State. It is this—if another man can make butter and compete with the best Eastern made in the city of New York, why may not we, who are now getting only ordinary prices for our butter in San Francisco, send ours East also? Undoubtedly you can, when you make it of quality equal to the best. You pay the same prices to have your ordinary butter made that another does for the best. This is a bad policy, and we shall hope to see our dairymen everywhere giving more attention to the care of their animals, the quality of their food, the treatment their cows receive from the herdsman and milkers, and the scrupulous cleanliness and skill in every department of the dairy establishment. Much might be gained to the proprietors of large establishments, by employing better or more experienced butter makers. If they must be procured from some one of the most noted Eastern butter and cheese factories at high rates, over ordinary workmen, get them, for it will be found a paying investment. The old and almost golden rule will well apply to butter making—"That what is worth doing, is worth doing well." We need only the right men and women in the right places, and we can compete successfully with the best butter the world elsewhere can produce.

STRAWBERRIES.—Ten days ago strawberries were bringing one dollar per pound at retail; now they are abundant in all the markets of the city at from 20 cents to 25 cents per pound. There is every prospect of abundant yield the present spring and summer, and prices will undoubtedly rule low. We hear of no blight, bugs or insects affecting the vines; but owing to the unusually wet spring, the berries though large, are not up to the full standard of sweetness.

ALL wet lands should be thoroughly drained except cranberry marshes.



FITCH'S PATENT FENCE-POST DRIVER.

has been cropped several years is too rich for onions. The whole difficulty lies in the fact that you have plowed your land too deeply, immediately before sowing the seed. Land is best fitted for onions where manure is applied, by plowing in the fall, leaving it till early spring and then only cultivate with a harrow or cultivator and not more than 4 inches deep, and many deem 3 inches better. If the ground is soft and porous to a greater depth than this, the roots will strike deep down and be sure to produce the vegetable monstrosity called scullions or "bull-necks;" whilst they are never produced on land with 3 or 4 inches of mellow surface soil resting on a firm bottom.

RHUBARB.—There is an abundance of this pie material in the city and selling at unusually low rates, depending on quality; and quality seems to consist, in size and tenderness. Small and stringy stalks are not worth the trouble of marketing.

both mountain and valley land. Of this, 300 acres are in wheat, 300 in barley and 200 in hay; to say nothing of other crops that are always produced in greater or lesser quantity around any well-conducted homestead. But, as if not satisfied with crops within the ordinary range, the proprietor in this instance must go a little out of the way, to secure a success, and put in 40 acres of peas, which are now being harvested and sold green, as successive sowings ripen.

Here then are 40 acres of land on which the work of harvesting is being done, at a time that in no way interferes with any other crop on the farm and paying a large profit. But this is not all, upwards of ten thousand almond trees of the Languedoc variety are being cultivated in nursery, with a view of going largely into the growing of this nut, which is an autumnal crop, always sure, commands a steady remunerative price, and has the property of long keeping, and the world for a market. Such well-conducted farming enterprises succeed in any country.

CORRESPONDENCE.

Will the Use of Vitriol Prevent Smut?

EDITORS PRESS:—In your issue of the 16th inst. I noticed an article from "Eagle Quill" on the use of vitriol as a preventative of smut in wheat. I would like to have him explain through your valuable paper, what effect vitriol put on wheat that is planted now can have on the grain that ripens six months hence.

I have had a little experience in growing wheat which I will give:—In 1869 I sowed five acres of wheat which had been soaked in bluestone water after the manner described by "Eagle Quill"—i.e. soaking over night or about 12 hours before sowing; the seed was nicely put into the ground and grew finely; when the grain was ripe there was smut scattered throughout the piece. The year following, 1870, I sowed the same piece of ground with wheat raised the year before—the smutty wheat—without using bluestone, and did not find one head of smut, and there was a good crop of wheat. Now I don't by any means contend that bluestone causes smut. Very probably there would have been smut in the first crop had I not put the bluestone on the seed. I only contend that bluestone has no effect whatever on the crop by simply soaking the seed unless enough is used to kill the seed.

A SUBSCRIBER.

Olema, March 22d.

Letter from Carmel Valley.

Ramie.

EDITORS PRESS:—Can any of your readers give us a fairly drawn balance sheet of the cost and the profits of Ramie cultivation. Also what temperature suits it, and to what class of soil it is adapted. I have just read a little tract, printed by a nurseryman who has roots for sale, which contains all the favorable part of the business, as \$400 a ton for fibre in England; a yield of 800 to 1,000 lbs.; three times a year per acre, etc., etc. I have lived sufficiently long to receive all such fair-seeming accounts with a large "grain of salt," and should like to hear from some grower what are the expenses of planting and first year's cultivation, then how much harvesting costs, (it appears it must be cut by hand,) and how many men and horses are needed to pass sufficient through the breaking machine to produce 400 lbs. fibre daily. Then, is the baled fibre so bulky as to be charged double freight per ton? and what commission is charged on the sale of it in "Frisco?"

To Kill Lice on Cattle.

In your last issue you give an extract recommending brine as a wash for calves infested with lice. If any are not successful with that treatment let them try grease rubbed well in round the neck, and along the back, a little calomel or "red precipitate," or any preparation of mercury mixed in it will ensure its efficacy, or one-tenth part coal oil may be mixed with the melted grease. Coal oil alone scalds the skin. A better remedy still is to keep all stock fat; it is poor, half-starved animals that fall a prey to lice. I would apply the remarks of your correspondent who wrote on the hog question some weeks back to stock of all kinds, and say that if you can't keep your live stock in good condition, don't keep them at all. Half-fed animals don't pay, are a misery to themselves and a disgrace and misery to their owner.

Farmers' Wives

Will all feel grateful to you for your extract from *Heath & Home*. There are two classes of wives common in these parts, those who do too much and those who do too little. I fear the former class greatly predominate, and I have often thought how much harder the "ranch life," about which "Mary Mountain" is eloquent, necessarily comes to a woman than it does to a man. A man goes out continually, and any excitement there may be on the ranch, he is in the thick of; his work differs continually, and he enjoys frequent change of scene; while the housewife goes the same plodding round, cook, wash, darn, patch, year in and year out; and unless

cheered by some tenderness and devotion on the husband's part, leads a life poorly described as monotonous. Were the time and money spent by the husband round saloons and stores expended round his home we should hear of fewer unhappy marriages and fewer applications for divorce.

I don't believe in "Woman's Rights," that is, I don't believe that the possession of one one hundred thousandth part of a voice in the national palaver will much improve a woman's position, but I do believe in a wife's right to be loved by her husband "as his own body;" to have her enjoyments cared for, and considered, and to be a helpmeet for a man in his pleasure as well as in his toil. Any man who thinks he does all the hard work should try a day's washing, and see which he likes best, washing or plowing. E. B.

Suggestions from a New Comer.

EDITORS PRESS:—A short time ago I handed you a small greuback for sample copies of your publication; these I have received, for which I thank you. I am much pleased with your style of paper and now hand you \$4 for one year's subscription.

As a foreigner, pitched down by "overland high pressure," into the most barren part of the Sage Brush State, where neither farms nor farmers exist, I have great difficulty in understanding much that I read on agriculture, and the special inducements to would-be settlers of the different States and counties are very indistinctly shown to me by the style of the general correspondents of the different agricultural papers which I read.

You, for instance, in your publication of March 9th, give a very neat illustration of a farm house—very perfect in its arrangements I must say—but how about the cost? no estimate of quantity or quality, or price of lumber; no statement of labor per day or for the whole. To a stranger this does away with its utility. I am not able to judge whether I can adopt in whole or part this plan or not. I am no nearer than I should have been if an English architect had sent me the plan by post without remarks or specifications.

Again I read in an Eastern paper a very good letter on "Farming in Iowa." He tells how you can break up a certain number of acres and plant corn which will yield so many bushels at so much; how the same land will produce so much wheat next year at such a price; but he says nothing as to the labor and expense; he does not tell whether two or four horses can plow, or if bullocks are better, or the price of horses, bullocks, food, labor, fencing, buildings, implements and many other things which would be most instructive to the "new chum."

Allow me therefore, gentlemen, to humbly express an opinion that if you would weekly give the new comer a short article of advice and information as to the advantages and disadvantages of different localities, with special inducements to certain classes of cultivation and the suitability of certain classes of individuals to the different localities, stating capital, etc., required, where labor is dear or cheap, scarce or plentiful; price of labor, material, provisions, fuel, lumber, fencing, with different modes of purchase of lands cash and credit—homestead and pre-emption, government, railroad and private lands, with many items of little specialties which would strike the suitable parties and which would be the means of placing the right men in the right places, and thereby keeping them there, which would be the best advertisement for the sale of lands which you could devise. A line from a settler to his old home does a new country more good or ill than is usually understood.

Being myself placed in the position of one who is wishful to settle and farm, having a wife and a son in the old country whom I wish to bring out, I feel the great want of information on which I can depend, and hope that in trusting to you for it I shall not be disappointed.

WILLIAM HANNAM.

Mineral Hill, Nevada, March, 1872.

The queries of our correspondent are in the main well put; but with a little further consideration of the subject he must see how utterly impossible it is for us to give an estimate of the cost of such a farm house as we illustrated, and have the same applicable to all situations. Were we to say that it could be built for \$3,000

here or anywhere around the Bay of San Francisco, it would not follow that the same amount would build it at Mineral Hill, Nev. Our correspondent should first decide on the plan and style of his house; then get a resident mechanic, or two of them, if possible, to give a bill of the necessary lumber and other materials, and their cost delivered, and an estimate of the cost of the labor necessary to complete the desired work, including all cost of transportation, etc. In this way, and this only, can even an approximate estimate of cost be reached.

So in regard to the cost of cultivating an acre of corn. The "labor and expense" will depend on the condition of the land; and the number of animals required to plow depends on the same; whilst the cost of implements would depend entirely on where they are to be used, whether in Iowa, Nevada or Oregon.

If we were to say that any particular county or section of the State was better than another for the new comer to settle and invest his money in, we should have the whole press of the State "down on us" within a week. As you stop in Nevada, we can hardly advise you; but were you to have come through to California, you could hardly have gone amiss.

THE DAIRY.

Something about Cheese.

In Europe the production of cheese reaches a yearly value of nearly fifty million dollars. This article is manufactured in the most diverse ways and from varying materials. It is made from the milk of cows, of sheep, of goats; it is flavored with different plants; it has every degree of consistency, shape, smell and color; and a list of the names of the varieties would fill a respectable portion of a newspaper.

Cheese is made in China out of the lupine, and, indeed, it can be made out of any kind of pod vegetable, as peas, beans, etc. It is necessary only to grind the pulse to meal, knead with water to a dough, add a little salt and let the mass ferment, when it gradually becomes of a cheesy character. Vegetable cheese thus made is much liked by many and is recommended as containing a very large amount of nutriment. To satisfy the often peculiar taste of epicures, cheese is frequently allowed to decay. During decay, plants and animals of a low order are formed. The reddish mould consists of a plant (*sporendonema casei*) occurring as red spots collected in rosettes. The blue mould is another plant (*Aspergillus Glaucus*) consisting of jointed threads club-shaped at the ends. The brush-like grayish green mould is the *Penicillium glaucum*; and the egg-shaped orange yellow spots are the *Oidium aurantiacum*.

Of animals we know the cheese maggot (*Acarus siro*) disagreeable looking creature occurring in the shape of a whitish dust, which is made up of thousands of the animals. They are slow in everything except feeding. Their peculiar organs of feeding provided with two nippers on the jaws and the formation of their feet are noticeable, but are visible only with a microscope of at least 250 magnifying power. With these animals occur, chiefly in Dutch cheese, the longer cheese-maggot (*Acarus longior grer*).

Of the larvae of the cheese-flies (*Prophila casei*) 7 varieties are known in Europe, and these are remarkable from the fact that they can live on salt alone. Finally we have the maggots of the ash-gray stink-fly (*Thephritis putris*) which scents decaying cheese from a long distance.

To keep away insects, sellers have applied a solution of salt to the surface of cheese, but, as we have said, the cheese can live on salt. Finding this futile, some persons, without thinking or knowing what they used, tried fly-powder. This, consisting of arsenic, was effectual in keeping away insects, but not adapted to benefit the health of the consumer. The best method of preserving cheese seems to be to put it on hanging shelves in cool, dry places and to cover it with hops.

Cheese contains a large amount of nutriment and is good food for strong, healthy people but not for children, invalids or weaklings. On an average a good cheese contains about 33 per cent. of the elements which serve to build up the body, 33 per

cent. of the elements which serve principally to keep up respiration, 27 per cent. water and 5 per cent. of mineral matter.—*Bl. f. Ldw. v. Gew.*

Notes on Butter.

Prof. Julius Lehmann has been making some experiments as to the causes why cream sometimes gives poor butter and sometimes gives none. His results have been published in the *Bl. f. Ldw. v. Gew.* These cases are:

1. Uncleanliness of the vessels holding the cream and butter.
 2. Too long standing of the milk and cream.
 3. An unhealthy condition of the milk from which the cream is produced.
- The cream which gives no butter is always very sour and its smell and taste denote a decomposition of some of its elements. At least we must grant that there is in such cream some substance which causes its abnormal action in butter-making. The nature of this substance is not yet understood; but the professor has a way of making it harmless as regards separating the cream into butter and butter-milk.

That the trouble in making butter often arises from uncleanliness of the vessels, cannot be denied. Where wooden vessels are used, a simple washing with water is never sufficient. The milk and cream get into the minute pores of the wood and are not removed by the process of washing and drying, but remain there, decay, and injure the following charges of milk, from which is obtained, therefore, poor butter or, in some cases, cream which yields no butter. The professor recommends that, after the usual washing and drying, a little soda solution and hot water (in the churn a wine glass of soda solution to one gallon of water, and in the cream vessel a liquor glass of soda solution to one-third gallon of water) be put into the vessels, which are well shaken 5 or 6 times during half an hour and then well washed with hot water and dried.

The cattle troughs should also be kept clean and occasionally, at least once a week, washed out with lime milk; for it cannot be doubted that decaying matter, used by the cows as food, deteriorates the quality of their milk.

Sometimes letting the milk or cream stand too long injures it for butter making, although many dairymen hold to the opinion that the longer the milk stands the more cream is obtained. This opinion is entirely wrong. The milk should not stand longer than 36, or at most 44, hours at a temperature of 59°.

Is the cream deteriorated so that it gives no butter, put it in a wooden vessel, stir it continually and add a diluted solution of soda (to 1 wine glass soda solution one-sixth gallon water) until yellow test paper on contact with the cream assumes a brownish color. As soon as this occurs, and the cream has lost its sour taste, let it stand quiet a quarter of an hour and then stir and add very carefully dilute hydrochloric acid until the solution gives blue test paper a faint red color. The addition of the acid has changed the excess of soda in the cream into common salt; and the cream now, after working it an hour at the utmost, will give very good butter. The professor has often tried this method and always with the best of success.

Should too much acid have been added, the butter can only with difficulty be made to form large lumps. In this case the material is strained through cloth.

The professor thinks that no dairy should be without soda solution for cleaning the vessels. This, of 1.4 spec. gravity, should be kept in bottles with tight glass stoppers. After using, wash the stoppers with water, wipe dry and rub on it two or three drops of table oil. The dilution of the solution or of the hydrochloric acid must always take place in glass vessels.

WHEAT BY THE BUSHEL.—The Sacramento Union figures up the crop of wheat the coming harvest at 28,277,000 bushels, allotting 2,090,000 bushels to Solano, 567,000 to Napa and 1,384,000 to Yolo. The value of the crop at one dollar per bushel, is set at \$28,700,000, not including \$7,354,500 for the barley crop. Friedlander estimates 600,000 tons of surplus for export, requiring three hundred ships of 2,000 tons burden to carry it away.

GRAIN ELEVATORS IN CHICAGO.—Four of the six grain elevators burned last fall are being rebuilt, and the others are soon to be, also. The elevator capacity here next fall will be some two million bushels more than before the fire.

MECHANICAL & SCIENTIFIC.

Variation of Color in Birds with the Locality.

The subject of variation of color in birds, as expressing specific distinctions, has for a long time occupied the attention of ornithologists; and while with some the slightest difference in shade was sufficient to establish a separate species, a wide variation was allowed by others without effecting the idea of specific identity. We are gradually, however, coming to appreciate the influence which external conditions, such as light or shade, moisture or dryness, varying temperature, latitude, etc., produce upon color; and so long as the general pattern remains the same, we can allow a great variation in tint, and even in size, since, as is well known, this depends largely upon latitude or altitude of birth-place and residence. As a general rule, it may be said as we go southward from a north temperate latitude, with the increasing temperature and brighter sky the colors are deeper and the size less; and, on the other hand, in proceeding northward and into more clouded atmospheres, the dimensions become greater, with a decrease in general brilliancy. In sandy or barren regions the accompanying birds become of a grayish tint, while in red soils a reddish shade will be appreciable.

Again, in certain regions the birds exhibit a tendency to melanism, or a blackening, this being noticeable in Florida, and more especially in the West India Islands, as compared with the United States. An instance of this is seen in the common red-winged blackbird, the female of which, as found in the United States, is variegated with brown, yellowish, and grayish streaks, the male alone being a glossy black, with red shoulders. A blackbird is found in Cuba, however, the male of which is undistinguishable from our bird, excepting in the smaller size, while the female is of a uniform lustrous black, differing only from the male in the absence of red upon the shoulders. Similar comparative peculiarities are presented in quite a number of West Indian birds.—*Harpur's Sci.*

FAYE'S VIEW OF THE PHYSICAL CONDITION OF THE SUN.—The *Mechanic's Magazine* gives a summary of an interesting paper by Mr. Faye, upon the physical condition of the sun, deduced from the observation of the solar spots made by Carrington. This is expressed in the following propositions:

1. That Zöllner's theory, which views the sun as a solid body covered with a layer of incandescent liquid, is entirely improbable, and, indeed, impossible.
2. The speed of rotation of any point whatever, on the sun's surface is always expressed by one and the same formula.
3. There do not exist on the sun's surface any sensible currents which are at all analogous to the "trade-winds."
4. The absolute absence of currents is only explicable by the presence everywhere of ascending currents of great intensity, proceeding from the sun's center to its surface.
5. The existence of such currents is an imperative proof that the body of the sun must be in a gaseous state, and is an immense sphere of æiform matter of an enormous temperature, but which is continually cooling by the action of the ascending currents.
6. The sun is absolutely spherical.

SPECTRUM OF THE FIRE-FLY.—Prof. C. A. Young says this is "perfectly continuous, without trace of either bright or dark lines, and extends from a little above Fraunhofer's line C, in the scarlet, to about F in the blue, gradually fading out at the extremities. It is noticeable that precisely this portion of the spectrum is composed of rays, which, while they more powerfully than any other affect the organs of vision, produce hardly any thermal or actinic effect. In other words, very little of the energy expended in the flash of the fire-fly is wasted. It is quite different with our artificial methods of illumination. In the case of an ordinary gas-light, the best experiments show that not more than one or two per cent. of the radiant energy consists of visible rays; the rest is either invisible heat or actinism; that is to say, over ninety-eight per cent. of the gas is wasted in producing rays that do not help in making objects visible."

HAILSTONES OF SALT AND IRON SULPHIDE.—According to *Nature*, Prof. Kenogoth, of Zurich, Switzerland, during a hailstorm, lasting 5 minutes, on the 20th of last August, found stones, some weighing 12 grains, which consisted essentially of common salt, mainly in imperfect cubical crystals. He supposes that the salt had been taken up from the salt plains of Africa and brought over the Mediterranean. Hailstones containing each a small crystal of sulphide of iron, probably weathered out of rocks in the vicinity, fell recently at Kasan.

RUBBER CARRIAGES.—A factory is being erected at Fairfield, Conn., in which carriages are to be built consisting entirely of India rubber, with the exception of the axles and tires—this material being claimed to possess decided superiority over wood.

UNIFORMITY IN CAR BUILDING.—A plan to make all railroad cars throughout Germany of one pattern, so that repairs may be facilitated and prices equalized, has been proposed by a scientific association of railroads in that country.

LIGHT VS. HEAVY SHAFTING.—The *Scientific American* gives a very instructive article on Light vs. Heavy shafting, the summing up of which is as follows:—To sustain great pressure requires great strength, and increased strength of a given material having a specified form implies increased weight. Increased weight implies increased friction. It is, therefore, a theoretical fact proved in practice that the heavier a line of shafting is, the greater will be the loss in friction during the transmission of power through it. It is also a fact that light shafting running at high speed will perform work that would break heavier shafting running at lower speed.

We have here a plain argument in favor of light shafting. In the applications of these principles, however, we often see errors committed which tend to render some people skeptical as to their truth.

One of these errors is that light shafting is often not properly supported. The lighter the shafting, the more apt it is to spring by its own weight, the weight of pulleys and gears, and the tension of belts. Light shafting will require, therefore, more frequent support from hangers than heavy shafting. Besides, with high velocities, there is more fiddle-string vibration, aided by centrifugal force, which consumes more or less power, generally more than is suspected. The obviation of this calls for frequent supports along the lines of shafting, with accurate fitting of couplings, journals and boxes, and as perfect alignment of the shafting as possible.

To keep everything in perfect order will also require constant watchfulness. Slight settling of buildings, springing of floors, from the placing of new and heavy machinery or other cause, alterations which cannot be prevented, will often throw a shaft out of line, no matter how perfectly it may have been hung.

A cognate subject to the above is the size of pulley, which the editor promises to consider in a future article.

BOILER EXPLOSIONS.—Prof. R. H. Thurston has published in pamphlet form a report of the trials made last fall at Sandy Hook. He draws the following conclusions: 1. Low water, although undoubtedly one cause, is not the only cause of violent explosions, as is so commonly supposed, but a most violent explosion may occur with the boiler well supplied with water. 2. What is generally considered a moderate steam pressure may produce a very violent explosion of a weak boiler, containing a large body of water, and having its flues well covered. 3. A steam boiler may explode under steam at a pressure less than that which it has successfully withstood at the hydrostatic test. In a subsequent letter to the *Eng. and Min. Journal*, which demurred to the first part of conclusion 1, the Professor explains that he referred to a very prevalent belief among those managing steam boilers that an explosion may always be attributed to low water and that the invariable effect of over pressure is simply to rupture the weakest spot, allowing steam and water to blow out until the pressure is taken off. The consequent feeling of safety among engine-drivers and firemen, having charge of boilers rendered unsafe by other causes, has been, probably, the cause of many explosions and loss of life. The removal of this false impression will assist greatly in making the real causes of the majority of explosions—corrosion and carelessness or ignorance in management—better recognized.

WOODEN NAILS.—The editor of *The Hub*, the carriage makers' journal, thinks the idea of using wooden nails a good one, for in his opinion the day will come before many years when wood will become so valuable that it will not pay to use the material of old packing boxes for fuel as is now done, and then the objection to the use of iron nails will be seen in a practical light. If boxes were put together with nails of wood the injury to tools in making them serve for other purposes would be materially lessened, and a great saving of valuable lumber be made. It is not to be supposed that wooden pegs or pins can be made to supplant iron nails and screws altogether, yet the lavish use of nails may be checked perhaps with advantage to our industries. The object is worthy of our consideration.

THE ROAD STEAMER seems to be making practical progress in Great Britain. One of these machines recently made the run from Ipswich to Edinburgh by road, a distance of 450 miles, in seventy-seven hours' traveling time. The engine is one of four now being built for the Indian Government, under Thomson's patent, with india rubber tires, and is of 14 nominal horse-power, but which has been worked up to 80 indicated horse-power. Her weight is about 13½ tons; length, 15 feet; breadth, 8 feet 8 inches; height to top of chimney, 15 ft. The omnibus weighs about 3½ tons and seats 21 passengers inside and 44 outside.

CRYSTALLIZATION.—Professor Chultze has recently exhibited, to the German Chemical Society, Berlin, beautifully formed crystals of sugar, borax, and other substances. He states that by the use of a gelatinizing substance as a solvent, the formation of perfect crystals is much promoted. Solutions of gelatin and kindred substances were the vehicles he employed.

SPONGE PAPER, a late French invention, is made by adding finely divided sponge to ordinary paper pulp. The paper is said to have all the peculiarities of sponge, absorbing moisture readily, and retaining it for a long time. It has been used to advantage for dressing wounds, and is capable of several important technical applications.

USEFUL INFORMATION.

UTILIZING INSECTS IN INDIA.—Wallace in his "Malay Archipelago" gives the following account of the manner in which the superabundance of insect life is turned to account in the islands of the Malay Archipelago. Writing of Lombok, an island at the east end of Java, he says:—Every day boys were to be seen walking along the roads and by the hedges and ditches catching dragon flies with bird-lime. They carry a slender stick, with a few twigs at the end, well anointed so that the least touch captures the insect, whose wings are removed before it is dropped into the basket.

The dragon flies are so abundant at the time of the rice flowering, that thousands are soon caught in this way. The bodies are fried in oil with onions and preserved shrimps or sometimes alone, and are considered a great delicacy.

In Borneo and Celebes, the larvae of bees and wasps are eaten either alive as pulled out of their cells or fried like the dragon flies.

In the Moluccas islands the grubs of the Palm-beetles (Calancha) are regularly brought to market in bamboos and sold for food; and many of the great Lamellicorn beetles are slightly roasted on the embers and eaten whenever met with.

OILING AND BLACKING HARNESS.—All harness that is in constant use should be washed, oiled and blacked at least twice a year. When it is to be oiled, unbuckle all the parts and wash the surface clean with strong soapsuds. Any coating of gum which the soapsuds will not remove, may be removed by a little turpentine or benzine. Then warm the leather through and through. As soon as it is dry on the surface, and before it is dry to the center, apply the oil. Neat's-foot oil is the best. Linseed oil will make the harness dry and stiff. Apply the oil with a paint brush or swab, the harness lying on a bench or smooth board. The small pieces may be dipped in a pan of oil and drawn out slowly between the thumb and fingers to wipe off the excess of the fluid. By using a large pan one can oil a harness in a few moments neatly and thoroughly, and without wasting any oil. As soon as the oil has dried in, a coat of leather varnish should be applied. *Industrial Monthly.*

WHAT IS FERMENTATION?—It is asserted by Miss Coleman and "Beechwood" that fermentation is "rotteness," "death." On the contrary, it is life, literally and philosophically speaking. It is the progenitor of all life from the germination of the smallest seed to the hatching of the largest egg. Without it no life could begin, no life could continue. It is thus described in *Wood's Botany*:—"When a seed is planted in moist soil at a moderate temperature, the integuments gradually absorb water, soften and expand. The water is decomposed, its oxygen combines with the carbon of the starch stored up in the tissues, carbonic acid is evolved, and the starch is converted into sugar for the nourishment of the embryo, which now begins to dilate and develop its parts," and life begins.

Fermentation is a changing of the materials of organism for the creation of new ones for the purpose of nourishing life. It is not rotteness; neither is it death; but if properly arrested, may endure for ages, as in the case of "old wine."

SAFETY-MATCHES.—Casualties are continually occurring from fires caused by ignition from the still burning ends of lighted matches thrown carelessly aside; and it may be of interest to learn that a mode of preparation has lately been devised by which such a result may be entirely prevented. The principle of the new match consists in impregnating the wood of which it is made with a chemical solution which prevents the carbon from remaining a fiery mass for a single instant, as in the case of ordinary matches, so that as soon as it is blown out it may be thrown with perfect safety upon inflammable or explosive substances. The manufacture is said to be no more expensive than those now in use.

MOUNTING DRAWING PAPER.—First moisten the paper thoroughly; then lay it upon the board in proper position and with blotting paper remove most of the moisture for a distance of about one-half inch from the edges; then take strips of Manila paper (not too stiff), about 1½ inches wide, covered on one side with mucilage, and paste them down on both paper and board, allowing them to lap on the edges of the sheet about half an inch. Keep the middle of the sheet thoroughly wet until the mucilage has set, when the whole sheet may be allowed to dry gradually. This method is quick, sure and of especial use when coloring is necessary. *Industrial Monthly.*

SNORING.—Snoring is, of all bad habits, the most intolerable, and it is comforting to know that a device has been found out to mitigate its horrors. A long and flexible tube leads from the nose of the patient to his ear, and thus the undulcet sounds which he creates awakes the author. He, in effect, consumes his own snoring, much as a well-constructed factory chimney consumes its own smoke; and, being thus convinced of the enormity of his own sin, learns to repent him and keep his own nose under better control.

The number of miles of railroad now operation in the United States is 60,382.

HINTS TO MANUFACTURERS.—The most important rule for a workshop is "a place for everything, and everything in its place;" and its rigid enforcement will save hours in time, and dollars in money, every week. Keep your floors and benches clean, and force journeymen and apprentices to take some degree of pride in the appearance of the benches and parts of the floors they occupy. It is not difficult to get a good workman interested in such matters; and the best workman, if he be a reliable man, is the cheapest under every circumstance. "Cheap help" waste and destroy as much as they earn, and the result of their labors is seldom satisfactory. We could never understand why a manufacturer, who could not think of touching his cash-drawer without the knowledge of his book-keeper, should deem it proper to walk into his factory and give his journeymen instructions regarding their work without first informing his foreman of his intention to do so. A competent foreman is naturally sensitive of his prerogatives; an incompetent one you do not anticipate employing. If you engage a foreman, give him entire charge and control; if not, engage an assistant foreman and be foreman yourself, taking the responsibility as well as the credit of so being.—*Cabinet Maker.*

Mechanical Hints.

TO MAKE SUPERIOR LATH.—Much of the lath of commerce is of poor quality, and unequal in thickness and width. Often it is sawed out of pine slabs saturated with pine gum which will often strike through a heavy coat of mortar and color the wall. In many instances a builder is located 20 or 30 miles from a market where lath can be obtained. But he may possess an abundance of cheap timber of the best quality for lath, and may have convenient machinery for sawing. The writer was once thus located, having plenty of basswood, which makes excellent laths. He hauled to the sawmill a few logs 16 feet long (the width of the rooms) and had them sawed into plank 1½ inches thick. These he hauled home and sawed into lath three-eighths of an inch thick and 16 feet long. In no place in the dwelling did the lath break joint. The mortar, of clean sand and good lime, was laid on half an inch thick and neatly troweled off; and for more than 20 years, no crack appeared in the walls. The laths were sawed as follows: A circular saw, one foot in diameter, was put on the journal of the fire-wood-entree; a movable table, about 16 feet long, was made to move easily on a roller way, about 32 feet long; and the saw was driven by two one-horse railway powers placed side by side. A two-horse railway power or a steam engine would be much better. With such an apparatus one man could saw lath as fast as he could handle a plank.

HOW TO BUILD BRICK CHIMNEY-TOPS.—All the brickwork above the superstructure, whatever the material of the building, should be made with cement mortar, which absorbs less moisture than that made of caustic lime and sand. The bricks for a chimney-top should be soaked in water for a few minutes, so that they will not extract the water from the mortar. In order to have mortar become very hard, it must dry slowly. By laying wet bricks, the mortar will set slowly, dry slowly, and eventually become almost as hard as the bricks. Every brick chimney should be covered at the top with a copestone, an arched top, or bricks placed over the flues, like the rafter of a building, for the purpose of turning off the water which would go down the inside, be absorbed by the bricks and perhaps soak through and wet the paper or kalsomining on the inside. A chimney-top made as above will stand the influences of the weather over a hundred years without repairs.—*Industrial Monthly.*

A CHEAP CELLAR-BOTTOM.—Grade the bottom of the cellar, letting the outside be at least two inches lower than the middle. Lay cobblestones down in rows and ram them down one-third their thickness into the ground so that they will not rock nor be sunk by heavy weights, as molasses barrels, etc. Fill all the interstices with a grouting of clean sand and water lime, or Rosendale cement. When this has set, cover with a layer, one inch thick, of good cement mortar. In order to spread the mortar even on the surface, lay an inch board one foot from the wall on the surface of the pavement, stand on the board, and fill the space with mortar even with the top of the board. After this move the board one foot, fill the space with mortar and trowel off smoothly. Such a floor is cheaper than one of boards, and exceedingly durable.—*Industrial Monthly.*

KEEPING FROST OUT OF THE CELLAR.—The temperature of a cellar can be kept above the freezing point, and thus vegetables therein preserved against frost, by keeping fire in a small stove, or by letting a pipe extend from the kitchen stove to the bottom of the cellar and then, by means of two elbows, return up to the chimney flue. The hatchways and windows should always be packed or shielded with shavings, sawdust, hay or some other material which will prevent a current of cold air from entering.

A CHEAP PACKING.—An engineer says that for packing for the stuffing-boxes of pumps he uses common wood shavings from a carpenter's bench. Fill the box well with shavings and press them down either with a packing-stick or by screwing down the valve once or twice. The water causes the shavings to swell; they are found to be effectual and durable.

Who Builds the Fences?

EDITORS PRESS:—As you are very kind in responding to subscribers, I wish to propose a question to you.

A party hires a ranch which is unfenced, and bordering upon several other ranches. He has no stock, but the other ranchers have, and after harvest they let them loose so that they range wherever there are no fences to hinder. The owner of one of the adjoining ranches demands that the portion of fence on his border shall be put up. Now to whom does the duty fall, the proprietor or the tenant?

OUR ANSWER.—You cannot compel the proprietor to build the fence, unless it was stipulated in the lease that he should build it. The "other ranchers," cannot compel you or the proprietor, to fence his land, unless he pleases to do so. If the "other ranchers" go in person, or take with them their stock or allow it to invade your home or barn, because the doors are open, or go upon your crops because they are not fenced, and do you damage, the highest court in the land will compel them to pay you for it.

This compelling a man to stand guard over every dollar's worth of his own, upon his own land, to prevent its being appropriated by his neighbor or his cattle, is, to use a hackneyed but highly significant phrase, "played out."

Culture of Dwarf Apples.

EDITORS PRESS: In a recent number of the RURAL, I read an interesting notice or account of dwarf apple trees; and wishing to make trial of a few—will you please tell me through your ever interesting paper, something about the cultivation of dwarfs, how they are grown, or where the seed can be procured.

Paradise stocks are not usually grown from seeds; but are propagated from slips or sprouts, broken from the stocks of growing trees, as the quince is sometimes propagated; and from cuttings. Where but a small number are wanted, rooted trees are best procured from nurserymen, who have better facilities than the inexperienced fruit grower, for growing cuttings, having generally the aid of a hot house for the early forcing and certain growth of the cuttings or off-shoots.

Having procured your stocks, bud them with the desired varieties; and as the object is ornament as well as utility and profit, select the most showy sorts, as well as those that hang the longest on the tree, choosing generally winter varieties, of bright and pleasing colors. Give them a deep, rich garden soil, plant six feet apart and keep the whole ground well cultivated and free from weeds.

Tobacco Plants.

A "new man at the business" wishes to know how to start his tobacco plants, inasmuch as last year the weeds got entirely the start of his plants and ruined them.

The trouble with tobacco seed generally is, that it will not vegetate as soon as the seeds of most weeds. Therefore, to get the complete start of these weeds, select a piece of ground rich in vegetable or leaf mold, 14 feet square or 21 or 22 square yards; cover the whole surface with any kind of old wood, logs or coarse brush, anything that on being burned will so heat the ground as to kill the seeds of any weeds within four inches of the surface.

Next burn completely and dig up the ground to a depth of three or four inches, and rake the surface fine and smooth. Sow half an ounce of seed only upon the quantity of land named above, and rake thoroughly again. When the plants are two or three inches high transplant.

A FINE HORSE.—We saw at Scovill's stable a day or two since, one of the famous Norman breed of horses, belonging to A. Wilsey of Petaluma. This splendid animal is 17 hands high, 4 years old and weighs 1,480 pounds; and is as near faultless in form as any animal can well be. The horses of this breed are famous for their quick and strong gait, and great powers of endurance; and are always healthy. This fine animal will be taken to San Joaquin Valley, Alameda county for the season. Stock growers can hardly do better than avail themselves of this opportunity to improve their breed of useful and valuable horses.

WHEAT SHIPMENT.—The large ship, Adriatic, cleared for England this week with 3,300 tons of wheat, the heaviest shipment this season. The "Glory of the Seas" carried 3,200 tons. The total shipment since the 1st of July amounts to 1,162,000 cents against 3,500,000 cents for the same time last year.

THE SHEEP FOLD.

Sheep Raising in California—Its Increase and Profits.

There are now about eight millions of sheep in California. This is an increase of three millions and twenty-five thousand since 1869. To the number first mentioned must be added this spring's lambs, of which about three millions will be raised. These figures show the astonishing rapidity with which sheep increase here, despite much poor breeding and crossing and the most careless and inhumane system of feeding and treatment. The value of the wool is as great as the increase in the number of the sheep is rapid. There are two clipplings, the spring and fall. In good years for feed the spring clip averages six and the fall four pounds. Each sheep will yield this spring an average clip of four and a half pounds, or 36,000,000 pounds in all, while the total wool crop of last year was only about 20,000,000 pounds. Some prize bucks on Mr. Jewett's ranch, in Kern county, clipped a 32-pound fleece, and the ewes 22 pounds each, which was last June worth 28 cents per pound, or a total in the first case of \$8.96, and in the others of \$6.16. Young bucks of six months to three years old bring \$15 each in Kern county, and the orders are generally far ahead of the supply.

Our wool brought very good prices last year, but probabilities favor better prices this year than ever before. It is expected that 35 cents per pound will be the ruling rate. If all the crop sold for that price we would have a total of \$6,800,000 for the spring clip alone. These figures are enormous, considering how crudely the business of sheep raising has been followed and its comparative infancy in California.

No branch of agriculture has proved so well or been so safe and unvarying in its yield as sheep raising. The market cannot be glutted either. Purchasers are now scattered all over the State, and are offering better prices than were paid for even the highest-priced wool last year. Our wool has this advantage: It can be placed in the Eastern market and supply the wants of the manufacturers there two months before the Atlantic shearing is performed. California wool has of late come into great favor, too, and for the same reason that our wheat is preferred. Our climate is very dry, and our wool is, therefore, less oily, and consequently shrinks less than that raised in the much more humid climate of the Atlantic States and Canada.

The foothills and mountains are thought by many to be the best portions of California for sheep raising. The water there is purer, the air cooler, the shade of trees better, and the feed keeps green and succulent longer. The advantage of good water is a great one. The sheep is a very dainty animal in this respect. He will almost die of thirst rather than drink muddy or alkaline water. He will thrive better on good water and poor feed than on good feed and bad water.

Of course first-class sheep run on public land are now comparatively scarce in this State, but as there are still many millions of acres of Government land in the foothills and upper ranges of the Sierra Nevada, good locations can still be hunted up by the expenditure of one or two month's time. Sheep are now always driven down into the valleys from the upper mountains in winter, but this need not be the case. The provision of even rude shelter and the storage of hay will do away with the necessity of a change of location.

Railroads are being extended, and extended rapidly, either directly through or contiguous to those localities where cheap or Government land is most plenty, and where sheep raising pays best. The San Joaquin Valley branch of the Central Pacific road is being built at the rate of a mile a day. The town of Visalia, (which is 90 miles from Merced) will be reached early this summer. Progress is likewise being made on the California and Oregon branch of the Central Pacific. Wool-growers and farmers along the foothills, north and south are thus brought in easy communication with the great central markets at a large saving in time and money, as compared with their former condition.

We direct the especial attention of the sheep-raisers of Vermont, New Hampshire and the other New England States, and of the Canadas, to the foregoing facts about sheep-raising in California. Many of them would net two to three times as much from the business by a removal to this State with their blooded merinos as the profits

they now make in their old homes, where the climate is less favorable and the soil much less prolific.—*Bulletin.*

Spanish Merinos.

Mr. Richard Peters, of Atlanta, Ga., writes to the *Rural Carolinian*, that in the year 1847, he purchased a farm in Gordon county, in order to try sheep raising in connection with other stock. He obtained a flock of one hundred selected native ewes. They proved to be unprofitable, subject to disease, and not calculated for keeping in large flocks. He disposed of them after a three-years' trial, and purchased at high prices specimens of the improved English breeds, including the Cotswolds, Leicesters, New Oxfordshires, and Southdowns. He bred them pure, and crossed them with the native sheep. The result was neither profitable nor satisfactory. They appeared to thrive well for a year or two; then they gradually became unhealthy, more especially during the summer months. In the year 1859 he purchased a flock of pure bred Spanish Merinos, and from that day to this he has been remarkably successful. His flock has increased to upward of three hundred head, and he desires to increase it to a thousand head. They have continued perfectly healthy, are easily managed, and yield annually an average of seven to eight pounds of wool per head. Until he adopted the Merinos he could seldom find in his flock a sheep fat enough for mutton. In April last he sold to the butchers in Atlanta a lot of grass-fed two years old wethers, pronounced to be the best mutton brought to the city during the season. He obtained for them \$6.50 per head after being sheared.

The cross between the Spanish Merino and the native sheep has been tried by a number of persons in the Southern States and all agree as to the superiority of the half bloods, as compared with the native sheep both in the quantity and quality of the fleece, and in their size, vigor and rapidity of growth.

Ira S. Hazeltine, of Richland Centre, Wis., has kept as many as two thousand Spanish Merino sheep, and five hundred or more Long Wool sheep—Cotswolds, Leicesters, and Lincolns. He has kept three hundred of the latter in one flock through the winter and had them do well. He writes the *Rural New Yorker* that he is satisfied that the Spanish Merinos will do much better in large flocks than will the Long Wools, and he prefers them for subduing rough pastures, and rough usage in large flocks, but likes the Long Wools best for raising lambs, and much the best for mutton.

Sheep Husbandry.

1st. There is a wonderful difference between the well-doing of a small and large flock of sheep. The small flock will often do exceedingly well, whilst the large one will fail in health and comparative profit and advantages. I am not prepared to say why this is, but all experienced farmers will concede this point.

2d. Sheep will not do so well closed up in any yard or pen, no matter how well arranged it may be, as they will if allowed to roam about and have plenty of air and room. Out-door exercise seems to suit them far better than a yard with but little space to run about. Where the winters are long and the snow covers the ground for many months, sheep are prevented getting at the earth, of which they naturally consume a great deal; and nature seems to require such a medicine, or change of diet.

3d. Bran that is old or has been heated, or has become a little musty, is highly injurious to sheep, and must never be given; it will often produce severe scouring in the middle of winter. When one sheep is thus affected, the rest will often become infected also.

4th. Any disease that affects one sheep, will infect the whole flock, even when not thought to be infectious.

5th. In many localities sheep will not do well, even with the same care as elsewhere under the same treatment, whereas in some places sheep seem to thrive without any special cause of great care. Of this there is no doubt, and we see it continually made apparent. Adapting the breed to suit the locality will do much to assist; but young sheep farmers must not think because they see sheep doing so well and costing so little in some places without care, that their flocks will thrive well under similar treatment.

6th. It is a great mistake to suppose that sheep can do without water, or that they are better without it. It is so far

true, as that sheep are certainly injured by drinking water in large quantities at irregular intervals, and many are made sick thereby; but if water is always before them, so that they can drink a little at a time, as wanted, they will seldom or never hurt themselves. Watering once a day will not do; they will often hurt themselves by drinking too much when supplied at such long intervals. When fed with roots, there is no occasion for water—90 per cent. of such food is water, and is taken in small quantities and often.—*Cor. Canada Farmer.*

STORING WOOL.—If the clip of wool be not sold or sent to market at once, it should be stored in a tight room, free from dust; and if intended to be held for any considerable length of time, should be well covered from the light. This latter precaution being taken, the fleeces will not so rapidly become yellow, and otherwise unsightly.—*Live Stock Journal.*

San Joaquin Farmer's Club.

First Regular Session.

The above named Farmers' Club met in regular weekly session on Saturday at 1 o'clock March 23d, Dr. Holden, President, in the Chair. There having been no regular question set for discussion, the members took several subjects under general review, viz: sacks, the movement of the forthcoming crops, etc. Dr. Holden reported that he had procured the furniture and fixtures required by the Club, and he presented a variety of agricultural pictures and several valuable maps. It was resolved to subscribe for the leading American agricultural journals, and several European publications devoted to agriculture, consequently, as soon as the returns can be had, the members will find on the Club tables the *American Agriculturist*, *Rural Press*, *Country Gentleman*, *Rural New Yorker*, *Scientific American*, and other publications of interest. It was proposed to discuss the following subjects as soon as they could be brought up, viz: importing sacks from Europe; insurance of growing crops against fire; summer fallowing; improvement of stock by joint importation; machinery for the coming harvest; experiences in garden irrigation; forming a company to bore artesian wells; grape culture as a diversity in the labor of small farmers; adopting a set of rules to prevent fires in harvest fields. The question adopted for discussion at the regular meeting to be held March 30th, at 1 o'clock p. m., is: Plan of procedure to be adopted by the Club, including rules and regulations for the government of the organization.

The Club has leased a fine pleasant room over Evans & Obrien's store, which has been partly furnished and tastefully decorated with maps, pictures, etc. The room is very pleasantly situated, convenient to the business center, and is designed for the use of the members of the club at all times. Files of journals will be kept, and it is the intention to procure a collection of standard works upon agriculture, to which the members will have access.

Senator Cole's Land Bill.

An excellent bill for the protection of settlers on public lands was offered in the United States Senate by Mr. Cole, of this State, which was referred to the Committee on Public Lands, and ordered printed. Following is the full text of the bill:

SECTION 1. That every citizen now residing upon the public lands of the United States or who may hereafter settle upon such land, shall be held and deemed to be, in law, the owner of the same; *Provided, however,* that his or her possessions do not exceed in extent one hundred and sixty acres of agricultural land fitted for cultivation; or six hundred and forty acres of land if the same be useful for pasture or timber only; or forty acres if the same be known as placer mining lands.

SEC. 2. That every person occupying the public lands of the United States, as provided in the preceding section, shall, after two years of actual continuous possession, if the same be agricultural or pasture lands, be entitled to a patent for the same from the United States free from all costs and charge whatsoever, and if timber land, or placer mining land, or other mineral land, at the rate or price now prescribed by law.

SEC. 3. That none of the public agricultural, pasture, timber or placer mining lands of the United States shall be disposed of otherwise than as in this act provided.

SEC. 4. That all agricultural, pasture, timber, mineral and other public lands of the United States, except reservations for Government purposes, whether surveyed by the United States authorities, or unsurveyed, or whether offered by the Government or not, if the same remains unoccupied by patent, shall be free and open to occupation and settlement, and shall be subject to the provisions of this act, any former act of Congress relating to the same to the contrary notwithstanding.

SENOR PINTO, near Watsonville, in this State, raised on fourteen and a half acres 1,333½ bushels of wheat, which is at the rate of ninety-two bushels per acre, lacking only two quarts.

FARMERS, everywhere, write for your paper.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Enterprise, March 23: A meeting was held at Bigg's Station on March 23d for the purpose of forming an association to protect the unfenced crops against the ravages of stock in the western portion of Hamilton Township, Butte county. The meeting was called to order by E. D. Smith and H. L. Lassell was elected permanent President, after which the following resolutions were adopted:

Resolved, That we, the undersigned, are hereby united as an association for the protection of growing crops that are not fenced, in that portion of Hamilton Township in Butte county lying west of the California and Oregon Railroad and north of said Township to Butte creek.

Resolved, That it shall be the duty of the President to call together this association upon due notice of any member.

Resolved, That it shall be the duty of any member of this association to assist when called upon by another member, in driving off trespassing stock, and if there be any resistance on the part of owners of stock, it shall be the duty of the President to call together as many members as he may deem necessary to drive off of said premises all such stock.

Resolved, That any member refusing to assist another when called upon shall not be entitled to any protection from this association.

Resolved, That this association shall be responsible for the acts of any number of members when called out for duty by the President to drive off any stock that it may be necessary to expel from our boundaries especially when resistance is made by the owners of such stock.

Resolved, That it is not the object of this association to violate any known law of this State, but to protect ourselves from the depredations of the stock of those who do not regard the rights of others and drive their stock and leave them where they know they will trespass upon the lands of others.

Resolved, That we will use all the means in our power to protect the stock of our neighbors who evince a laudable desire to keep it from our grain fields, and if any of their stock may be found upon our lands the same shall not be abused, but taken care of without cost, and returned to their owners.

Resolved, That the proceedings of this meeting be reported to the several papers of this county.

Another meeting will be held on the 6th of April.

CONTRA COSTA.

Gazette, March 30: THE FARMERS' CLUB MEETING.—It is more than ever important that the meeting to be held next Saturday at Walnut Creek, to revive the Farmers' Club, should be attended by every farmer and citizen who has any faith in human capabilities for improvement, or who does not believe that we have attained the limits of perfection in our system and methods of rural economy and productive industries. The frequent interchange of ideas, experiences and observations, is necessary to the progress of those engaged in any pursuit, and more especially to those engaged in the pursuit so affected by varieties and conditions of climate, weather, seasons and soils. If "two heads are better than one," in the same sense two hundred are proportionally better still, and farmers, certainly, if any class of intelligent men, may find mutual profit in interchange of their varied experiences and observations.

COLUSA.

Sun, March 30: It will be remembered that some time ago a quantity of shad-spawn and young fish were placed in the Sacramento river near Tehama, having been brought from the East by the Fish Commissioners, with a view of introducing shad in the waters of California. On Thursday, an Indian boy in the employ of W. F. Goad, Esq., caught a fish at this place, by means of a hook and line, which was thought by many to be a young shad. It was brought to this office and we pronounced it a herring. A difference of opinion exists, however, as to what species it belongs. A reward of \$50 has been offered for the capture of the first shad in these waters.

WEATHER.—The light showers and cloudy weather of this week have materially improved the crop prospects by moistening and mellowing the surface of the ground, which had become so tight and crusty as to exclude the air and imprison much of

the sprouted grain that had not got above ground before the last previous rain. The wind is in the rainy quarter and the sky has a very rainy aspect at this writing, (on Friday); and although our rain measure of the season has reached the mark of 27.13, more light showers now would do no harm, and they will be welcome all through the coming month.

On Tuesday last, William Wood, while riding on a gang-plow, on Grand Island, was thrown from his seat by the horses making a sudden plunge, and both bones of the right leg broken below the knee, by coming in contact with some of the machinery. He was conveyed to the residence of Richard Gleason, where the limb was set by Dr. Robinson. The sufferer is doing as well as circumstances will permit.

CROPS IN COLUSA.—We met with one of the Gupton Bros. this week, who informed us that the crops in the upper part of Colusa never looked better. Mr. Gupton has 3,700 acres seeded, which is all up and growing finely. He says that from Jacinto and Princeton to the foothills there are ten thousand acres more in cultivation this year than any previous season.

KERN.

Californian, Mar. 23: The cultivation of the Ramie plant on an extended scale will be attempted in this county this year. It is believed we have a soil and climate that will develop this product in perfection. There seems a difficulty in procuring the plants at reasonable prices, to supply half the demand.

LOS ANGELES.

News, Mar. 23: The Wolfskill orange orchard, in Los Angeles county, the oldest in the State, at present contains 1,700 bearing trees, and the yield this year is estimated at 1,360,000 oranges.

MATTERS AT SANTA ANA.—At last they have succeeded in striking water in the artesian well being bored in the Santa Ana valley. The well is now three hundred and fifty feet deep, and a good stream of water is flowing, although not quite as freely as it will flow after taking up the sand pump which is at present blocking up the bore. This will be taken out at once.

Mr. D. M. Dorman is building a new hotel at the flourishing little town of Santa Ana. It will contain fifteen commodious sleeping apartments.

The crops in the valley are looking well. At least three thousand acres are under wheat and barley. Farmers are in good spirits.

MERCED.

Argus, March 23: The town of Merced is rapidly assuming shape, and every day new buildings are commenced, while a large number are being finished and made ready for occupation by their owners. Up to this date three dry goods and grocery stores, two hotels, two restaurants, two livery stables, two drug stores, two blacksmith shops, two printing offices, three butcher shops, and about one dozen saloons have been opened. The frame of the great hotel, being erected by the railroad company, is up ready for the roof timbers, and will be completed and ready for business in about sixty days from this time. It is a monster building for an inland town, and will cast its shadow upon many buildings in its vicinity of humbler proportions. Merced is already a most important trading point, and bids fair to soon outrival any town built upon the railroad lines in the State.

SHEARING COMMENCED.—In passing Hewlett's sheep ranch, about eight miles south of this place, on Tuesday last we observed the shearers at work clipping the fleece from his flock. It is the first flock, we presume, that is being sheared in this neighborhood, most of the sheep-raisers preferring to wait until after the equinoctial storms, before taking the winter coat off of the sheep. The wool-clip of the county this spring will be unusually large, the winter having been very favorable. The grass sprang up early in the season, and the sheep have had several months run upon excellent green and juicy pasturage.

THE PROGRESS OF THE RAILROAD.—We are reliably informed that the Valley Road will reach the upper crossing of the San Joaquin early next week. The design is to throw a temporary bridge across the river and continue track-laying toward Visalia without delay, and the company expect to have a permanent bridge completed across the San Joaquin river before the spring rise of water from the melting of the snow takes place.

NAPA.

Tribune, Mar. 28: REAL ESTATE.—Many strangers are arriving here, looking for homes in our beautiful valley and foot-

hills, and considerable real estate is changing hands at good prices. Lands can be had within a radius of three miles of town at prices ranging from \$5 to \$100 per acre. Foothill lands are held at \$5 to \$25 per acre.

CALISTOGA TEA GARDEN.—Some two years ago parties leased a piece of ground in Calistoga, for the purpose of experimenting with the tea plant. Several weeks ago, the *RURAL PRESS* stated that the garden was a success. The *PRESS* was misinformed. A very few out of a large number of the plants from the seed of last year are barely above ground, and the enterprise is, beyond doubt, a failure.

HAY.—The farmers of this vicinity are taking advantage of the fine weather to put in their crops. There will be a much larger crop of hay this season than ever before, judging from the indications, the long-continued rainfall having prevented the sowing of as much wheat and barley as would otherwise have been done.

SACRAMENTO.

Record, March 9: Thos. O'Brien, the veteran gardener and horticulturist, and proprietor of the Rosedale Nursery, on B street, beyond the Park, was engaged yesterday in loading a railroad car on the side track opposite his place, with every variety of choice plants and flowers, which he proposes to send to Salt Lake to be sold among the Mormons and Gentiles of that lovely city. Mr. O'Brien will accompany his freight in person, and immediately on his arrival in Salt Lake will open a depot for the sale of the plants. We believe this is the first attempt on the part of California horticulturists to secure the trade of Utah. Let our dealers in other lines of business follow his example.

BEE: THE CROPS.—Farmers inform us that late sown grain, except on the most sandy soils, would be benefited by a slight shower of rain. The moisture has been dried out of the soil within the last few days remarkably fast, and on some varieties of land a hard crust has been formed upon the surface, which will prevent the rapid growth of grain unless we soon have showers of rain to soften it. Early sown grain, however, is looking finely and the present weather is most favorable for it. In some localities it was feared that the grain sown on summer-fallowed land previous to the first rains, would be of such rank growth as to lodge and therefore become worthless. The last few days of dry weather have, however, had the effect to strengthen the growth of the stock, and the prospect for a large yield is therefore very good.

SANTA CRUZ.

Sentinel, March 30: CROPS—FRUIT.—We have been over the county in several directions the past week, and can safely report cheering news for the farmers. The grass is excellent and crops promise to be better than for several years. Up Blackburn gulch, wheat, barley and oats look very fine. Along Soquel creek and all over the table and terrace lands north and south of Soquel, from Santa Cruz to Aptos, all the early grain is very fine, and farmers are busy putting in late crops, on low lands where the soil is wet. The plow and harrow is busy on every farm, and gardening, pruning trees and grafting going on in every orchard. Mr. Varry Humphry was grafting in his orchard, while his boys were busy with brush and coal-oil, destroying the white woolly aphis, which is so destructive to apple trees along the coast. Coal-oil, if not put on too often, will destroy all kinds of tree insects, and is the best and cheapest remedy for the woolly aphis yet discovered. We commend it to our orchardists. Judging from the blossoms, an extra amount of all kinds of fruit may be expected this year, especially apples, pears, plums, cherries and grapes.

SAN DIEGO.

Union, March 21: INCREASING TRAVEL.—Lately the travel over the San Diego and Los Angeles stage route has been increasing and the coaches of Seeley & Wright rarely come into town without bringing some passengers, and many leave by the same conveyance. The route possesses many interesting sights for tourists, among which may be numbered the Hot Springs at San Juan, and the immense ranch of Don Juan Forster known as Santa Margarita and Las Flores. Another inducement to travel overland, is the fact that the stage road traverses the best portions of Los Angeles and San Diego counties, passing through the town of Anaheim in the former county.

SAN JOAQUIN.

Independent, March 30: WEST SIDE OF THE SAN JOAQUIN.—We conversed yester-

day with a gentleman from near Hill's Ferry, on the west side of the river, who gives an encouraging report of the prospect of large crops in that vicinity. The grain is looking well and the area under cultivation is much larger than ever before.

SPRING CLIP.—One hundred bales of wool, the first of the spring clip, from Hill's Ferry, arrived on the steamer Caroline yesterday. It was consigned to Christy & Wise, of San Francisco, for which place, the Caroline left at four o'clock yesterday afternoon.

SOLANO.

Recorder, March 20: The fields in the suburbs and the rolling hills as far as the eye can reach are now covered with a rich green. The grass is growing finely, and the wheat springing up vigorously. The lands that have not yet been plowed and seeded in the county, of which it is estimated there is at least one-half, will be put in condition with all possible haste, as the season is getting far advanced. The pastures near the city are abundant and the cattle and goats are grazing to their heart's content, and rose bushes are once more in bloom.

SONOMA.

Crescent, March 25: We learn that the heavy and long-continued rains in Sonoma county have prevented the improvement of the usual seed time, yet the farmers have not lost faith in the productiveness of soils and favorable influence of seasons. The ground is very damp, and during the past week or two plows are running, and with a late spring the crop of small grain will be an average one. What is lost in the breadth of grain sown will probably be made in hay. It is yet early for corn and potatoes.

YUBA.

Appeal, March 31: STEAM ROAD WAGON. Mr. Rees Nanna, who resides near Butte City, Colusa county, is having a portable engine transformed into a road wagon at the Empire Foundry. He intends to use it for hauling and driving his threshing machine, calculating to do away with horse-power entirely.

MONTANA.

Deer Lodge City Independent: THE CASIMERE GOAT.—Mr. W. A. Clark, banker of this city, has just shown us samples of the fine fleece of the Angora goat, lately received from Mr. N. Gilmore of El Dorado county, Cal. The wool is over 12 inches in length, of a rich glossy, silky character, white and inclined to curl. Mr. Gilmore writes that he has 60 pure breeds and about 1,000 heads of grade, (crossed with goats). The experiment of importing and acclimating these goats in California has been crowned with success. The offspring of the pure blooded goats are improved in size and bear heavier fleeces than the imported, with no deterioration in quality. The wool is worth \$1.20 per pound in Philadelphia. The crossing of them with the native goat, (breeding the Angora buck to the common female goat) has been equally successful. The fourth cross produces as heavy a fleece, and as good quality as the imported, while the flesh of the grades makes excellent mutton. Mr. Clark informs us that he will introduce the genuine Angora goat in Montana this summer, intending to cross with the Montana goat. We are pleased to see Mr. Clark taking such an active interest in this matter, as we believe that no part of America will equal Montana as a goat breeding country, and the cross with our native wild goats, if successful, will give us a new breed which will be sought after, and add greatly to the wealth of home productions.

OREGON.

West Side, March 15: CROP PROSPECTS. Contrary to all expectation, the winter has done no damage to growing wheat of any consequence. Some oats were killed by the alternate thawing and freezing in January, and made young wheat look pretty black for a day or two; but it all recovered with the exception of what little was in wet streaks of land, such as undrained swales. Fall wheat now looks as well as we remember to have ever seen it at this time of the year. There are some very fine fields in the neighborhood, among which J. C. Braley has about fifty acres of summer-fallowed land that will yield a big crop. A. C. Martin, T. Owens, and others have large tracts that are fully as good. But it will be in vain to attempt enumerating all the fine fields of wheat in the neighborhood, and we can only predict that if no very unfortunate weather intervenes, the crop of '72 will be the best of all.

HORTICULTURAL.

Cultivate Flowers.

EDITORS PRESS:—I am a reader of your excellent paper, and as I enjoy the writing of others so much, I send you a few of the ideas I have of plants in general. Although I may not interest any one, I would like to add "my mite" to the general intelligence of the day.

I find that after dew plants blossom and get scraggy, if they are cut down and kept well watered they will spring up anew and grow beyond your expectations, and I believe that house plants do the best; plants that are put into the ground do not grow and thrive unless it be roses or something of that sort. Unless one has facilities for watering every day, they soon lose the moist fresh look we like so much to see.

Potted plants make a home pleasant and comfortable to see. Ivies, geraniums, mosses and fuschias grow finely in a south or east window. A Maderia vine makes a very pretty hanging basket, and a large shell filled with dirt and planted with love tangle or Creeping Charlie, as it is called, will grow and thrive if kept moist. House plants as a general thing need considerable water. The steels of an old hoop skirt will make a nice small basket, by breaking them into equal lengths and bending and tying them with bright worsted braid, and setting a small common dish inside, in which your plant is placed. Wheat planted in a box of dew plant makes a pretty appearance. I speak of these because they are within the reach of every one who wishes a house plant; these are simple things and can be had by any one that has any taste for adding a new charm to the little home.

House plants show a refined and delicate vein, no matter how rough the exterior; and I hope to see an increasing taste for flowers. It seems as if a habit of hurrying through everything was daily growing upon our people, and they seem to have no time for little things. Some love to paint pictures, but all there is of a picture is what you make of it yourselves; it does not unfold anything new from day to day as plants do, and for the latter you do not have to buy paints and brushes to portray the magnificent colors that grow and expand and mature before your sight. Pictures will not furnish you food, raiment, or drink, as the palm does, in Cuba and South America.

Plants and flowers are God's pictures, painted by an unseen hand. They are designed for our physical benefit and for our pleasure. Plants are everything in the world to us and we should not forget to thank the giver of these gifts, or neglect to praise Him in our hearts, and remember that every good thing is given to us not by any merit of our own, but by the love our Heavenly Father bears for us.

E. W.

Lake County, March, 1872.

The Holly and Holly Hedge.

EDITORS PRESS: In a late number of the RURAL, reference was made to the Holly as adapted to hedges. The following extract is sent to show what has been done practically to make hedges in Great Britain of this popular evergreen. It is taken from Rhind's History of the Vegetable Kingdom.

The author says: "Were it not that the holly grows very slowly when young, and cannot be safely transplanted when it has attained a considerable size, it would make better hedge rows than the hawthorn. A holly hedge is a pleasing object, though it is too often clipped into formal shapes. Evelyn had a magnificent hedge of this sort, at his gardens at Say's Court, which he planted at the suggestion of Peter the Great, who resided in his house when he worked in the dock-yards at Deptford. He thus rapturously speaks of this fine fence: 'Is there under heaven a more glorious and refreshing object of the kind than an impregnable hedge, of about four hundred feet in length, nine feet high, and five in diameter, which I can show in my new raised gardens at Say's Court (thanks to the Czar of Muscovy) at any time of the year, glittering with its armed and varnished leaves, the taller standards at

orderly distances, blushing with their natural coral.' The largest holly hedge in Scotland is at Tynningham, near Dunbar, planted by a former Earl of Haddington, author of a treatise on fruit trees. It has for many years past been left uncut, and now presents a noble phalanx of deep shining green leaves, and numerous spiny tops, with spikes of coral berries. The timber of the holly is very white and compact, which adapts it well for many purposes in the arts; though, as it is very retentive of its sap, and warps in consequence, it requires to be well dried and seasoned before being used. It takes a durable color, black, or almost any other; and hence it is much used by cabinetmakers in forming what are technically called strings and borders in ornamental works. When properly stained black, its color and lustre are not much inferior to those of ebony. For various purposes of the turner, and for the manufacture of what is called Tunbridge ware, it is also much used; and next to box and pear tree, it is the best wood for engraving upon, as it is close and stands the tool well. The slowness of its growth, however, renders it an expensive timber. The bark of the holly contains a great deal of viscid matter; and

when macerated in water, fermented, and then separated from the fibres, it forms bird-lime."

This information from one of the most eminent botanists of Scotland, goes far to prove that we and our descendants will be well repaid, if we can successfully introduce the holly into California.

J. W. A. W.

Turlock, March 29, 1872.

NOTE.—In the article which we published last week, from the above correspondent, the botanical name of the Holly should have been printed *Ilex Aquifolium* instead of *Ilex Acquisfolium*.

The Patent Crab Wrench.

The accompanying cut represents the Patent Crab Wrench, a comparatively recent invention, but one which is coming into extensive use. Its peculiarity consists in the fact that it will grip nuts of all sizes without loss of time in adjusting. It will not slip, for the more pressure that is brought to bear, the tighter it holds. The head is made in two parts and by moving the handle one way it opens, and by turning it the other, it closes mechanically and gives the user the advantage of a leverage to prevent its slipping. It can be used with one hand, as it will grip the nut as soon as the jaw comes in contact with the nut and pressure is brought to bear on it by turning on the handle and closing the jaws.

An important feature is, that the wrench being composed of three pieces, each being stamped and numbered according to the size of the wrench, when any part wears out it may be replaced for a trifling expense, without the necessity of buying a new one. Its self adjusting properties, rendering it effective for quick work, are great recommendations in its favor. A look at the tool will satisfy any one of its utility. There are four sizes made, which will grip from a 3-inch nut down. They may be seen at Linforth, Kellogg & Co.'s, Nos. 3 and 5 Front street, in this city.

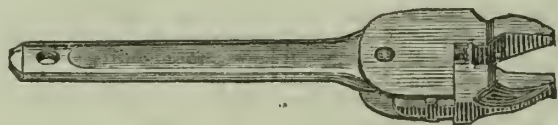
REASON FOR MARRYING A FARMER.—An English writer advises young women to look favorably upon those engaged in agricultural pursuits, assigning as one reason that their "mother, Eve, married a gardener." He forgot to add that in consequence of the match the gardener lost his situation.

SOUTHERN INDIANA is finding itself rich in black coal, a very valuable variety for treating iron ore, and also plenty of iron ore itself in happy proximity. Consequently, there is a great increase of the iron-making business in that section.

Improved Tug Buckle.

Any one who has ever had much to do with harness will appreciate the improvement in tug buckles, which our illustration represents. It is sometimes almost impossible to let out or take up a trace, and it can never be done without considerable inconvenience with the old fashioned buckle. If they have been in one place for any length of time they become rusted in, and where the harness is heavy it generally requires some tool to remove the tongue so as to release the trace. The invention represented in our cut is an improved buckle for connecting the trace tug with the hame.

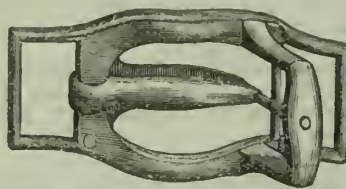
The buckle frame consists of two side bars which are united at each end by rods. One end of each of the bars is turned upward, as shown, so that the end of the tug can pass between the end rod and cross rod which unites the side bars at the point where they are bent. The tongue is



THE PATENT CRAB WRENCH.

loosely attached to another cross bar which unites the two side bars a short distance from the opposite end of the frame, and extends forward towards the cross rod, where it is bent upward so as to pass through the hole in the tug and into a hole in the flat staple plate, between which and the frame the tug passes. A flat spring has one end also secured to the cross bar, and extends forward so as to bear against the under side of the tongue and keep it in place.

The buckle is very strong and can be



easily released when desired, in order to change its position. The peculiar construction of the tongue permits the strain to come square upon the side of the hole in the tug, so that it will last much longer than when the ordinary tongue is employed. A bar provides a fastening for the hame tug so that the two tugs will be connected to the buckle. It will be seen that the tug passes between the two bars without being bent, and is held in that position by the tongue of the buckle. By so doing there is no possibility of the tug getting fixed so as to render it difficult to move. By the tug passing through the buckle without being bent, an important object is accomplished, because it does not wear out so quickly. After a tug has been in one place in the old-fashioned buckle for any length of time, one thickness of the leather is usually worn out, naturally weakening it. By the use of this buckle the harness will last much longer, for this difficulty is entirely obviated, the strain not coming on so small a portion of the leather. This very useful invention was patented through the SCIENTIFIC PRESS agency, by N. D. Fowler, of Valley Ford, Sonoma Co., Cal. Wiester and Co., No. 17 New Montgomery street, are agents.

CHECKMATING THE CATS.—A writer in the *English Mechanic* exults greatly on account of the success of a device put into practice by him for preventing cats from coming over the fence into his yard. This consists in nailing down horizontally along the top of the fence a piece of wire gauze or netting, having a coarse mesh, and projecting about two feet on each side. The netting will bend slightly downward by its own weight, and while it does not exclude the light or rain from the garden, will resist the most persevering efforts of any cat to surmount it.

SERICULTURE.

A Model Silk Nursery.

A few days ago we visited the mulberry plantation of Felix Gillet, at Nevada City. We were surprised to see what skill and enterprise, with very limited means, has accomplished in the short space of eighteen months. A comparatively barren and somewhat rocky hill has been reclaimed, and converted into a most delightful garden. The grounds have been laid out with artistic care. The natural obstacles, in the way of huge rocks and boulders that once covered the ground, have been broken up and used for terraces, and macadamizing roads and walks. The ground has been thoroughly pulverized to the depth of from eighteen inches to two feet, some four acres having already been treated in this way. He has twenty-one acres in his mulberry orchard, all of which is within the city limits. We are warranted in saying that there are no flower gardens, or private or public grounds in Nevada county, laid out with such artistic elegance as Gillet's mulberry plantation.

What Mr. G. has advocated theoretically on silk culture, he reduces to practice on his own premises. We were shown a large variety of mulberry trees, the largest we believe that can be found in the State, many of which were imported. Among these were the grafted Rose Leaf, the Nagasaki, or morus japonica, both bearing very large leaves and belonging, botanically, to the alba family. Mr. Gillet's reasons for adopting both these varieties in preference to others already introduced in California, are, that Japan is the only country in the world where silkworms are now-a-days successfully raised, and he thought it best to start with the very kind of mulberry tree the successful Japanese were feeding their worms with, and so imported, at very considerable expense, the large-leaf morus japonica—used throughout Japan, and spreading rapidly over Europe.

Besides the advantage of being wholesome food for silkworms, the japonica grows readily from cuttings, being able to produce a crop of leaves the first year of planting. The grafted rose leaf is a beautiful tree, bearing large leaves, all of the same shape, of a bright green color and very glossy. As its leaves shed very late in the spring, it makes a most desirable shade tree. This tree yields, it seems, one-third more to the acre, than any other variety known. The leaves, too, come off so easy, that it saves labor in picking them off. We were told—a fact that has repeatedly been ascertained—that the rearing up of both varieties, grafted and wild, as the roseleaf and japonica, produces a greater per cent. of silk than either variety used apart, or any other single variety known, whether belonging to the large or small leaf families.

Besides these two fine varieties, we were shown the Lhon, or Chinese large-leaf, a tree of very rapid growth; the common morus alba (of the small leaf family), the moretti elata, the multicanlis, the nigra (cultivated now exclusively for its large and delicious berries), and the grafted Nagasaki.

Mr. Gillet has already 1,200 trees of the japonica variety planted, 8,000 seedlings, and several thousand cuttings, all of the same variety. One hundred long-stem trees of the grafted rose leaf variety have already been planted, and 800 trees of the same kind budded. Mr. Gillet intends to continue planting every year, but in the same thorough, practical way. Very little water is used, in most cases none at all; and still the trees kept very green till the first heavy frost in the middle of November, last year, which was due to deep cultivating, and the use of pine leaves, ashes and some stable manure.

In addition to 700 mulberry trees imported from France a year ago, Mr. Gillet received with them a fine lot of the choicest and best varieties of grafted fruit trees, as apple, pear, plum, peach, cherry, chestnut and walnut, and grape vines of twenty varieties. They all thrived splendidly, as we could plainly see, on what was once a barren hill, under the intelligent care of the owner.—G. V. Republican.

SOUTHERN NEVADA AND ARIZONA EXPLORATION.—Lieut. Wheeler's party, which was in the field from May to December last, is now engaged in preparing an official report at Washington.

ABOUT one person in fifty is said to have good luck in the South African diamond fields.

FARM HINTS.

Steam Cultivation in Europe

In the February Report of the apartment of agriculture we find the following interesting statement in reference to the progress of Steam cultivation in Europe. At an agricultural meeting lately held in Scotland, Mr. Grey, of Aberdeen, gave some account of the progress of steam cultivation since 1855, in which year the late John Fowler started his first steam-plow in Essex, which was a very successful attempt. He subsequently expended \$350,000 in experiments, but after a few years he had nothing to represent this amount of invested capital except a lot of old machinery. The solution of the question whether plowing could be done cheaper with steam than with horses was decided in 1858; its importance may be learned from the fact that there are works in the country employing twelve hundred men in nothing else than making steam-plows. One farmer in Egypt employs four hundred steam-plows; he is also lying down four hundred miles of railway on his farm, principally to carry sugar-cane to his mills, and has ordered thirty locomotive-engines, and \$3,000,000 worth of sugar machinery. This farm is the Pacha. In Germany steam culture is making a revolution in agriculture. In England there are between 400 and 500 sets of tackle working for hire. These are held by companies as well as by private individuals; the investment has been found to be profitable.

A gentleman bought five hundred acres near London, that could not be rented at \$3 per acre. He took down all the fences, drained the land, bought a steam-plow, and put all in grain crops. Last year his clear profits were \$18,000 after allowing \$10 per acre for rent. The soil is a stiff clay that cannot be cultivated profitably by horse-power. Another farmer bought five thousand acres of what was considered worthless clay land, and by steam-power stirred it 3 feet deep, producing crops last year nearly 7 feet high.

In Scotland steam cultivation is becoming quite general, producing astonishing results. Many of the farmers there have invested from \$6,000 to \$10,000 in steam machinery, and find that it pays better than horse-power. Joint-stock companies are also in existence that invest in land and steam machinery, and secure large dividends.

Keep the Cattle Growing.

The most successful breeder of horses, cattle, sheep, or swine, know from experience that although they may possess the best breeding animals, they will not be successful in producing superior stock if a continuous growth of the young animals is not kept up. In order to begin in time at this indispensable preparation for success, the brood mares, cows, ewes, and sows are most carefully and suitably fed while with young, and as soon as the young animals make their appearance, they are taken the greatest care of, the dams being suitably fed while suckling, and when the young ones are weaned they are not supposed to want for food or drink a single hour. By this means a continuous or rapid growth is kept up, and the animals attain a large size and heavy weight at an early age. When breeding, animals are not properly fed and comfortably sheltered in winter, the bad effect of such treatment is not confined to their own want of condition—it is shared by their progeny, and can never be remedied. When young stock are not well fed and comfortably sheltered in winter, their growth becomes stunted, and no subsequent amount of food treatment can repair the damage. Young animals may suffer for want of proper provender in summer and autumn, as well as in winter, and when this happens it stops continuous growth and prevents ultimate success in the object of the breeder.

INJURY FROM INSECT.—Some idea of the injury caused by insects to agricultural products may be formed from the statement that from seventy-four tons of Spanish wheat stored in a granary, ten hundred-weight of beetles were screened out in one instance, and in another thirty-five hundred-weight were removed from 145 tons of American corn. The offender in both cases was a weevil, known as *Cobudra orisa*.

TO KILL CATTLE LICE.—It is said that cattle troubled with lice can be readily relieved of them by a free application of the water in which potatoes have been boiled. This is cheaper and better than tobacco decoction.

POLLED OR HORNLESS CATTLE.—There seems to be some doubt among farmers whether hornless cattle belong to a distinct breed or not. The fact is, that for some centuries past a breed of hornless cattle has existed in a district of Scotland called Galloway, whence this breed has taken the name of Galloway cattle. Under this name they are well known in Great Britain, and in Canada there is one breeder at least who makes Galloway cattle a specialty. Their color is generally black, coat soft and silky, size medium. At three years old, steers may be made to weigh from 800 to 1,600 lbs. They possess excellent points for beef cattle, being light in the bone, with frame square and well filled in. The cows give rich milk, though not in great quantity. The writer once possessed a cow of this breed that yielded nine pounds of butter per week when in her prime. Their lack of horns, in the estimation of some people, is a desirable qualification. In constitution these cattle are very hardy, and probably in no respect are they inferior to the Devons, while in regard to the matter of horns, or rather the want of them, we consider them superior.

RESULT OF VICIOUS FARMING.—A few years ago the average grain product per acre in Minnesota was 22 bushels. This year the State has an average acreage planted of 1,100,000. The total product is 13,200,000 bushels; average, 12 bushels per acre. This great reduction in the average is chiefly due to the vicious system of farming pursued in that State, where for years they have cropped the same land in wheat, to the ruin of the soil. This State has nothing to boast of over Minnesota in the matter of farming. We have cropped our fields in wheat and barley for 15 years, without change or rest, and the result is that lands which in 1856 were good for 30 bushels per acre, will now hardly average 16 bushels, and that, too, in the richest districts. New England, a century since, produced all the wheat she consumed; she now produces not a hundredth part of it. Vermont grows no wheat, or next to none. Ohio, once the Egypt of the new world, no longer grows her own bread; and Indiana will soon be fed by Nebraska and Dakota. The wheat crop moves rapidly westward. How soon must we at this rate look for bread to California?

TO TEST THE QUALITY OF WOOL.—A Texas paper says: Take a lock of wool from the sheep's back and place it upon an inch rule. If you can count from thirty to thirty-three of the spirals or folds in the space of an inch, it equals in quality the finest electoral or Saxony wool grown. Of course when the number of spirals to the inch diminishes, the quality of wool is relatively inferior. Many tests have been tried, but this is considered the simplest and best. Cotswold wool and some other inferior wools do not measure nine spirals to the inch. With this test, every farmer has in possession a knowledge which will enable him to form a correct judgement of all this kind of wool. There are some coarse wools which experienced wool growers do not rank as wool, but as hair, on account of the hardness and straightness of the fibre.

A HINT.—A correspondent of *The Country Gentleman* says if copperas and salt-peter water are used around pear trees, the trees will show the effect in a large yield of fruit. He tried this on a Bartlett pear tree that had yielded no fruit for two years previous; that very year it yielded 155 large, fine pears, and the following year 250 large, fine ones, and it is still doing finely. If pear trees want iron which most soils are deficient in sulphate of iron or copperas is a good way to supply it.

ECONOMY IN FATTENING ANIMALS.—It has been proved by experiment that the more rapidly an animal is fattened the less quantity of food is necessary to sustain its mere vitality. Thus, an animal can be more cheaply fattened by consuming ten bushels of corn in two months than if four months were occupied in the process. Liberal and abundant feeding is the most economical, and a saving of time in producing the same result is a gain in the profit.

The National Rubber works at Bristol, R. I., turned out a rubber belt recently, the dimensions of which were 175 feet long, four feet in width, and half an inch thick. The weight of this enormous belt was 2,000 pounds. It was of uniform thickness throughout, without blemish, and made in the best manner.

GOOD HEALTH.

Curious Antipathies.

The subject of sympathies and antipathies is extremely curious. Boyle fainted when he heard the splashing of water; Scaliger turned pale at the sight of water cresses; Erasmus became feverish when he saw a fish. A curious story is told of a clergyman, that he always fainted when he heard a certain verse in Jeremiah read. Zimmerman tells us of a lady who could not endure the touch of silk or satin, and shuddered when touching the velvety skin of a peach. Mr. Julian Young tells the story of an officer who could not endure the sound of a drum, and ultimately fell dead when compelled to hear it. There are whole families who entertain a horror of cheese; on the other hand there was a physician, Dr. Starke, of Edinburgh, who lost his life by subsisting almost entirely upon it. Some people have been unable to take mutton, even when administered in the microscopic form of pills. There is the case of a man falling down at the smell of mutton, as if bereaved of life, and in strong convulsions. Sir James Eyre, in his well-known little book mentions three curious instances of idiosyncrasy—the case of a gentleman who could not eat a single strawberry with impunity; the case of another, whose head would become frightfully swollen if he touched the smallest particle of hair; the case of a third who would inevitably have an attack of gout a few hours after eating fish.—*London Society*.

AUSTRALIAN CURE FOR SORE THROAT.—A correspondent of the *Queenslander* gives the following cure for sore throat: It cannot be too generally known that all forms of sore throat, whether simple, ulcerated, quinsy, diphtheria, scarlet fever, or otherwise, can be either totally cured or greatly alleviated by simply wearing a soft oil silk kerchief twice around the neck, high up and next the skin, especially if worn at night when the pain is first felt. Like Naaman the Syrian, people will take any trouble but the right one, and fly to gargles, blisters, lotions, pills, etc., and keep at them for a month at a time; but an old silk square—why it's too absurd, and so they hug their sore throat and wonder why it don't get better. Not only does the silk cure the sore throat, but it prevents a recurrence of it. I was formerly a martyr to quinsy and ulcerated sore throat, and used to have a whole month of it regularly, every winter, and in spite, too, of all the usual battery of pills, gargles, etc., it run its course till I tried the silk; the sore throat then took the hint and has left me alone ever since as a bad customer. I invariably killed it within an hour of any attempt it makes upon me; an old sore throat will take a day to cure. Mind, I do not pretend to say that the silk will cure fever or any other symptom or complication that may accompany sore throat, but this I do say, that it will cure and remove all pain and difficulty of swallowing in the throat without the aid of any local remedy, or it will do it in spite of them, if you do apply them and it both, but, without it, cure only comes by nature, not physic, as far as the sore throat goes; other remedies are neither good nor harm, except as they keep you from trying the infallible silk.—*Australian Paper*.

HOW THE SKULL PROTECTS THE BRAIN.—A child bears knocks which would be fatal in old age. This is owing to the skull being thin, uniform in texture, and elastic, in childhood; and to the brain being of a corresponding structure. The brain is at this age soft to a degree that would be unnatural in mature years. This resiliency of the skull, and yielding quality of the brain, explain how the child is uninjured by blows which would be attended with fatal concussions in after life. But there is also a provision in adults for moderating the effects of such accidents. In proportion as the brain acquires firmness during growth, a gradual change takes place in the structure of the bones of the head; the protecting cranium is not simply strengthened; it is not merely thickened; the flat bones which surround the brain are split into layers, an external and an internal one. Those layers have each a different density, and a softer substance than either is interposed between them; the effect of which is, to interrupt that vibration which would otherwise ring around the skull, and reach every molecule of the brain.—*Phrenological Journal*.

SLEEP.—A sufficient amount of good refreshing sleep is just as necessary to the health of the body, as proper food and sunlight. No one can do well without it; indeed, he cannot do at all, for when one loses his sleep he loses his strength and power of endurance with it. It is sleep that strengthens our bodies and repairs the waste of our tissues. Every movement we make during the day—every thought, every action—is attended with a loss of substance. Like a mill running by steam or by water, every hour's work uses up a certain quantity of motive power. During the night, while we sleep, this is all replaced, and we wake feeling refreshed and new, and ready for action again. No matter how hard a person may work, if he only gets a sufficient amount of sleep, he will thrive and do well. If he does not get sleep enough, no matter how little he works, he will always feel tired and uncomfortable. Sleep is the great restorer, the great invigorator. It is poor economy to steal an hour from refreshing sleep, with the expectation of making a paying thing of it.

Growing Men.

Dr. W. Holmes has shown what every body knows, that we are, as a race, deteriorating. But he has not given us the reason why the New England man grows smaller in bone and muscle. Chemistry tells us it is owing to the want of material in the soil to produce bones. Much is owing to our unnatural habits of life. Much to the weakness of our female sex, who do anything but develop their muscular powers. But the main reason why the race deteriorates so rapidly in the eastern part of New England, is owing to the hard granite soil, which does not furnish limestone sufficient to form the bones. In Kentucky, Ohio and Western Vermont, men grow to large size because of the limestone formation beneath the soil. Parts of families have emigrated from Massachusetts to limestone regions, and the result in the next generation, has been a larger bone development in those who left Massachusetts than those who remained. Kentucky, Ohio and Iowa will grow great men. The finest figures in the world will be found in the valley of the Mississippi in a few generations. Indoor labor, so unnatural for men, will weaken the vital powers and stop the growth in large cities, but the great and glorious West, with its broad prairies, will compensate for the growing feebleness of the Eastern States.

PROTEST OF LONDON PHYSICIANS AGAINST ALCOHOL.—A considerable degree of stir has been produced in London by the circulation of a declaration from a large number of the most eminent physicians of that city, in regard to alcohol, in which they state that, believing the inconsiderate prescription of large quantities of alcoholic liquids by medical men to have given rise, in many instances, to the foundation of intemperate habits, they are of the opinion that no medical practitioner should prescribe them without a grave sense of responsibility. They believe that alcohol, in whatever form, should be prescribed with as much care as any powerful drug, and that the directions should be accompanied by the understanding that its use is not to be interpreted as a sanction of excess, or for the countenance of its use when the occasion is past. They also state that many people immensely exaggerate the value of alcohol as an article of diet; and hold that every practitioner is bound to exert his utmost influence to inculcate great moderation in the use of alcoholic liquids. Being also firmly convinced that the large amount of alcoholic drinking is one of the greatest evils of the day, they urge the utmost caution against doing anything, either in their character as physicians or citizens, to extend its use.

PERSPIRATION.—The amount of liquid matter which passes through the microscopical tubes of the skin in twenty-four hours, in an adult person of sound health, is about sixteen fluid ounces, or one pint. One ounce of the sixteen is the solid matter made up of organic and inorganic substances, which if allowed to remain in the system for a brief space of time would cause death. The rest is water. Beside the water and solid matter, a large amount of carbonic acid, a gaseous body, passes through the tubes; so we cannot fail to understand that they are active workers, and also we cannot fail to see the importance of keeping them in perfect working order, removing obstructions by frequent application of water or by some other means. Suppose we obstruct the functions of the skin perfectly by varnishing a person completely with a compound impervious to moisture. How long will he live? Not over six hours. The experiment was once tried in Florence. Pope Leo, the Tenth, on the occasion of his accession to the Papal chair, wished to have a living figure to represent the Golden Age and so he gilded a poor child all over with varnish and gold leaf. The child died in a few hours. If the fur of a rabbit or the skin of a pig be covered with a solution of India rubber in Naphtha, the animal ceases to breathe in two hours.—*Journal of Chemistry*.

DEATH IN THE PIPE.—A correspondent who recently visited an English tobacco dealer, was attracted by a sample of which that looked like a superior quality of Cavendish tobacco. The dealer remarked, "what do you think of that?" The correspondent replied "that he thought it looked nice and asked where it came from." "From New York," was the reply. "It's a weed that grows wild. It is not tobacco at all, they tell me." "Does it sell?" asked the other. "It seems to suit the public taste," answered he, "for we sell a good deal of it."

CURIOUS ACCIDENTS.—The following described occurrences show how trifling a matter will sometimes result in serious accidents to the human system: The Waranga, (N. S. W.) *Chronicle* reports that a man feeling an ant on his back, in endeavoring to drive it away, dislocated his shoulder. The *Gipps Land Mercury* states that a Mr. Day, of Bairnsdale, while in the act of pulling of his boot, fractured the bone of one of his legs.

EXCELLENT TOOTH PASTE.—Suds of castile soap and spirits of camphor, of each an equal quantity, thickened with pulverized chalk and charcoal, to a thick paste. Apply with the finger or brush.

CUNDURANGO has long been known to botanists, as reported by Dr. Scherzer. It is used, in Guaco, in infusion or extract of the leaves for snake-bites, hydrophobia and cholera.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, O. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

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SAN FRANCISCO:

Saturday, April 6, 1872.

New Subscribers Wanted!

We wish to add 10,000 new names this year to our flourishing list of subscribers. There are 25,000 homes on this coast that ought to have the RURAL PRESS, and would have it, too, if fully advised of its value. We ask our present readers to help extend the circulation of our paper. Talk of it to your neighbors, show it to them, and point out the importance of its information. Send for free sample copies, and urge such as you believe would be benefited, to subscribe for it.

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RECEIVED.—The Constitution, By-laws, Regulations and list of premiums to be awarded at the 6th annual fair of the Nebraska State Board of Agriculture, to be held at Lincoln, Nebraska, Sept. 3, 4, 5 and 6th, 1872.

SEEDS NOT SENT.—The address of one of our subscribers who ordered watermelon seeds about two weeks since, has been mislaid. If any one has so ordered and not received, the order will be attended to at once if again forwarded to this office.

J. M. HUTCHINGS, whom the State will doubtless dispossess of his ten-year old home in the valley of the Yosemite, is lecturing to crowded houses in the Atlantic cities.

ON FILE.—We have articles on file for examination or publication as follows: "Poem" by C. E. H., and one by Welsh Bard; Transplanting Large or Small Trees; "A Voice from the Country," by Ernest North.

THE Colorado Legislature has appropriated \$4,000 to aid the agricultural college in that State.

The Coming Centennial Anniversary.

Mr. John Graham, of this city, has received a letter from Judge J. D. Creigh, the California delegate to the Commission which was called to meet at Philadelphia for the purpose of making arrangements for the approaching Centennial anniversary of our National Independence. From a perusal of that letter we infer that the preparations indicate that the event will be made one of greater magnitude than anything of the kind which has yet entered into the civil history of any nation on the globe.

The Commission, which consisted of twenty-seven members, has held several sessions, and has selected as a site for the celebration, the well known locality of Fairmount Park, upon which will be erected a main building which will cover about 50 acres of ground! The building will consist entirely of iron and glass and will cost about seven and a half millions of dollars! Other minor and special buildings will also be erected. The Commission estimate that the entire cost of the celebration will reach fifteen millions or more. The city and entire State, in fact, is alive to the importance and magnitude of the event, and citizens of all classes are making every possible exertion to encourage and help on the enterprise.

In consequence of some needed legislation by Congress and the State of Pennsylvania, the committee has adjourned until the 22d of May, when they expect to meet again and make all necessary arrangements to put in active progress the material preparations for the grand event. Very properly, and with a due appreciation of the importance of the feeling which should pervade the national heart, the most thorough arrangements are contemplated to unite all sections of the country in this demonstration; and every good citizen will hope that nothing may transpire to, in the least, interfere with the realization of this purpose in its full and most comprehensive sense.

Mr. Morrell, who was offered the Presidency of the Commission, has declined the honor in such a manner as to give the whole country more time for consideration in its choice of a gentleman in whom might be centered such feeling and confidence as would command the greatest amount of admiration. Some gentleman will undoubtedly be selected for the office, who, by position and all the amenities of nature and other circumstances, will be able to conduct the first grand celebration of the birth of the Nation in a manner worthy of the event and satisfactory to the people as a whole.

As we understand it, the design is not to make the occasion simply a grand gala-day, but in addition to the ceremonies, displays, addresses, etc., appropriate to such an event, the day will also be made the grand opening of one of the most magnificent industrial displays which the world has ever yet witnessed. The main building alluded to is designed for the reception and display of the industries of the country, and it is confidently expected that the United States will be able to show more strength and genius, in the mechanic arts and sciences, through the influence of that celebration, than has yet been shown by any "World's Fair" or other similar means yet attempted by the nations of the earth. If the proper current is set running, the only difficulty will be for Philadelphia to find room for all that is offered to show the productive resources of the country, and the progress which has been made during the first century of our national existence. It is confidently expected that the first centennial of the United States will be the grandest civil and industrial exhibition ever known in history.

A Generous Acknowledgment.

EDITORS PRESS:—The RURAL is a welcome weekly visitor, and improves with age. Before taking the RURAL PRESS I had been taking the Rural New Yorker and American Agriculturist, both good papers, but not adapted to the wants of California farmers. The RURAL PRESS is destined, I believe, to continue the standard paper of its class on the Pacific Coast. Every farmer should take it—it has already saved me by following its timely suggestions, ten times its cost. I will soon canvass my neighborhood and try and send you a good list of new subscribers.

The long continued rains have made farmers late in getting their land prepared for crops in this section; but they are improving the present fine weather, and about the usual amount of grain and dairy product is confidently predicted. Dairying is the great interest in this vicinity,

and the best suited and most profitable for this section of the State.

I will from time to time, in compliance with your published request for farmers to write for their paper, give your readers our experience and ideas of farming—our hopes and prospects. As I have been largely benefited by the experience and suggestions of others, it is no more than right that there should be a mutuality in feeling and spirit among the patrons of your paper in different sections of the State, in imparting what knowledge they possess, for the general good, through the medium of the RURAL PRESS.

Smith's Ranch, Sonoma Co.

We are always pleased to receive a good opinion of our paper from any source, but when it comes strait from the heart of the tiller of the soil, the man to whose interests the paper is more especially devoted, we feel like making renewed efforts, that our paper shall be worthy of his appreciation.

The Late Earthquake.

The earthquake which occurred on the 26th ult. was felt the whole length of California and as far inland as Winnemucca. The shock though comparatively a light one in this city, was one of the most severe on record in other localities, as well as one of the most widely diffused. A great variety of opinion is expressed as to the intensity, and in the numerous descriptions much discrepancy exists concerning the duration. The center or initial point of the shock seems to have been at Lone Pine, in Inyo County, the center of a mining district of that name, situated on the western base of the Inyo Mountains not far east of Mount Whitney. The country in which it is located is undoubtedly of volcanic origin and abounds with evidences of comparatively recent volcanic action. From facts elicited by the late "temblor" it is reasonable to suppose that the Kern or Inyo region is the seat of the greatest energy of the failing volcanic forces which raised the Sierra Nevada and covered the surface of the country with the evidences of its power.

The phenomena which occurred in that region were of the most appalling kind and some twenty three persons were killed and thirty injured by the falling buildings. Eye witnesses describe the scene in a manner which leaves no doubt of the power of the shock, and makes it a subject of congratulation that this city with its thousands of inhabitants, lofty brick buildings, and crowded houses, was so far from the center of disturbance. It is said that an instant after the shock occurred at Lone Pine (about half past two in the morning) not a building was left standing. The houses appeared to crumble away and fall into ruins. Cries for help from the wounded filled the air, and shock succeeded shock, added to the already overwhelming fright of the people who had escaped the first disastrous effects. Different accounts place the number of shocks all the way from 500 to 1,000, and it is asserted that each was invariably accompanied by an appalling noise, the reverberations of which through the mountains were as terrific as the noise itself. It sounded like the thundering explosion of a thousand heavy cannon fired at the same time. It seemed to be directly under foot, and at Independence the noise could be heard advancing from Lone Pine, and as the shock came on, thousands of huge rocks tumbled from the crags on either hand and crashed into the ravines and upon the edges of the valley below.

Big Owens Lake is said to have risen some four feet, and the Owens river overflowed its banks, whilst Little Owens Lake, 24 feet in depth, has entirely dried up. The earth is cracked and seamed in many places, and old springs dried up, while new ones were created.

Smut in Wheat.

On page 210 of this number a subscriber would like to have "Eagle Quill" explain what effect vitriol put on wheat that is planted now, can have on the grain that ripens six months hence.

Smut is but a vegetable, a plant, parasite, fungi or mistletoe, just as easily propagated as wheat, and thrives in nearly all soils prepared for wheat, and is ready to attach itself to, and destroy the wheat crop as it advances towards maturity. Smut sometimes appropriates the center of the kernel, by first attaching itself to the outside and then working in; and also attaches to the straw without apparent injury to the latter; so that though seed may appear sound, if examined by a microscope, will have a surface more or less affected by smut.

We admit that full smut grains will not vege-

tate or produce wheat; but what we do say, is, that they will produce smut plants or fungi, to seize upon the wheat at the proper season. Hence the necessity of destroying by some application, this foul plant, the germs or seeds of which are in countless numbers found on and in the kernels of what is known as smutty wheat, and no application has been found more efficacious than blue vitriol, or as it is commonly called, bluestone, in destroying its vegetative vitality.

Wine for London.

We note this week a shipment of assorted wines to London. The gentleman who makes the shipment has been a long time trying to persuade English people that California wines are fit to drink. The reply has been, we have tasted them, and we pronounce decidedly against them. This is the result of imperfectly cured wines bought at low prices; and often mixed—the mixture being sold as California wine.

At last, people in Europe are being convinced, by samples of properly made wines forwarded to them, that California wines are worthy of attention. Consignors are daily expecting to receive favorable judgment, from a consignment made to Hamburg; and, last week, our correspondent's samples brought orders from London for more California wines, of the same sort—7 varieties.

It is certain that our sunny climate produces wines of rich fruity bouquet, far surpassing the wines of France and Germany; and it is also true that the uniformity of quality, and the greater yield of our vines, year after year alike, and no such thing as failure, enables us to produce wine cheaper than in Europe. It is equally proved that our wines when stored above ground, instead of musty vaults, attain better ripening in two years than European wines do in five years; besides the great seasoning of the sea voyage hence to Europe. France wants land for the staff of life; and we predict that ere 20 years have passed, it will be a national question, if it would not be policy to turn uncertain vineyards into wheat and to buy better and cheaper wines from California.

Borer.

A careful study of the habits of this pest to the orchard, will establish the following facts, which if promptly and vigorously acted upon can hardly fail to secure exemption, to a great extent, from its attacks. It seldom attacks strong, healthy trees, but prefers those that from being recently transplanted, or from neglect, have become weak or stunted. Where trees are trained with tall, naked trunks, exposed to the scorching rays of the sun, the bark becomes thickened and comparatively inert, and especially so, when the tree leans so as to receive the direct rays of the sun during the hottest part of the day. This furnishes an inviting field for the operation of the borer, as is shown by the destruction of large patches of bark, producing what are commonly called "sun scalds," but which a closer examination will invariably show to be the work of this insect.

After a careful study of all the remedies proposed, as also the habits of the enemy, we would recommend the following as the most effectual. Mix soap and water to the consistency of paint and into this throw any refuse tobacco that can be procured, let it soak for a few days, or steep the same for an hour or two over a fire, and when cool, apply with a brush to the trunk and larger limbs of the tree; and repeat the same as often as it may be washed off by drenching rains till about the first of July. After which for that year there is no danger. Keep an eye constantly on the watch for the intruder and when his pathway can be discovered kill him by running a wire after him and plugging up his hole with soap.

A wide, low spreading top that will completely shade the entire trunk is almost a sure preventive, and if the ground can be kept quite wet for two feet around the tree during most of May and June it is nearly as effective.

The above is in answer to our correspondent J. L., of Reno, Nev.

RASPBERRIES.—Any one who has a garden without this fruit, should not let another season pass without planting of them. They are not only very nice fresh, but preserved by canning in sugar, or dried, are among the most excellent fruit there is for winter use.

Pelton's Improved Horse-Power.

Our illustration represents an improved horse-power which combines strength, compactness, a large wearing surface and consequent durability. It consists of two sets of triple gears, one arranged above the other, both of them driven by the same master-wheel. A case or boxing of novel construction and application covers the gearing or moving parts, which protects the power from dust and foreign bodies and men from danger of accident.

A represents the bed-frame upon which the horse-power is secured. The annular metal base plate is properly secured upon the frame A, and has a raised outer rim or vertical flange, C, which is formed into alternate raises and depressions, making the lower half or section of a circular box. The double set of triple gears are arranged inside of this section of the box, the two sets being arranged in alternation, and each of the six-toothed wheels engaging with the centre pinion which is made with a sufficient face to admit the engagement of both sets of triple gears. The horizontal bevel wheel is driven by the centre pinion being secured to the lower end of the same shaft, and it in turn drives the tumbling-rod. N is the upper half of the circular case, inside of which the train of gears is placed, and it is arranged with a downward projecting flange, O, which is also provided with alternate raises and depressions corresponding to those on the lower half, so that when the two flanges are placed together the projections will interlock and form a snugly-fitting side to the case, so as to resist the torsion consequent on the application of the power. The upper section of the box, N, is also annular, and recesses are made in the proper position around its inner edge, through which the pinions pass, so as to stand above the upper face of the upper section, N.

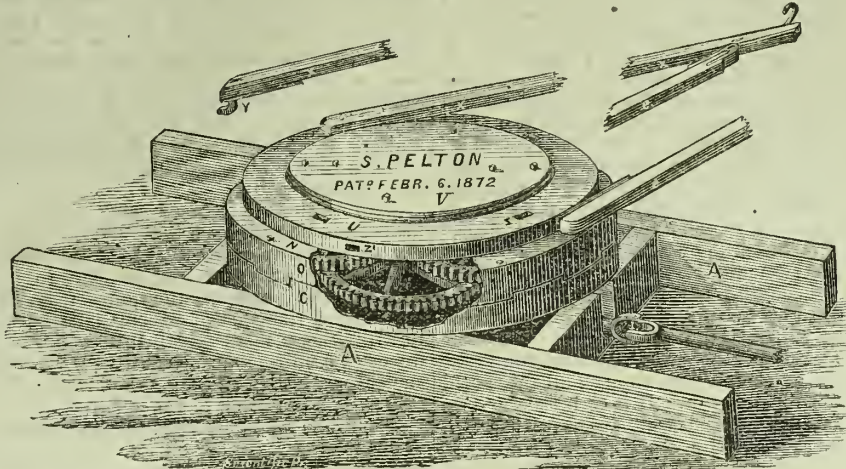
A raised ring is secured around the inner edge and above the circular opening in the upper section, N, being secured to it by flanges which project downward so as to leave sufficient space above the recess to allow the master-pinions to project above the case or box. The journals on the upper end of the vertical shafts which carry the double set of triple gears, bear and are supported in the holes in this ring, while the journal of the shaft which carries the center pinion bears in the cross bar below. The master-wheel, U, is an annular one with internal gears. In order to protect the gearing inside of the box, a cap or cover, V, is secured upon the raised ring, thus entirely concealing the operating parts, and preventing the master-wheel from being lifted or displaced by any means.

The four levers, x, to which the horses are attached, are secured to the master-wheel by means of a hook or curved bar, Y, which is secured to the end of each lever so that the hook shall extend beyond the end and in a line with the lever. Holes or slots, z, are made through the upper face of the master-wheel, parallel with its rim, and the hooks, Y, inserted by elevating the outer end of the lever until the end of the hook enters the slot, z. The lever when depressed will then be supported upon the master-wheel by the binding of the hooks upon the under side of the wheel. The braces, e, are provided at one end with a similar hook which is inserted into the slots, z', in the vertical rim of the annular master-wheel in the same manner as that of the levers. The outer extremity of the braces, e, are secured to the levers near their outer ends by a loose joint.

By this manner of arranging and applying the triple gears, a large amount of wearing surface is secured, and the strain is distributed more evenly, thus insuring durability and strength, while the entire

machine is at the same time in a compact and convenient form.

The arrangement of the box or inclosing case is at once economical and convenient. While it not only protects the gearing itself from injury, it completely obviates any liability of accident to life or limb, which the ordinary open horse-power is apt to occasion. It also excludes dust and dirt from the machinery, so that it will not be necessary to be continually cleaning the journals from the accumulation of



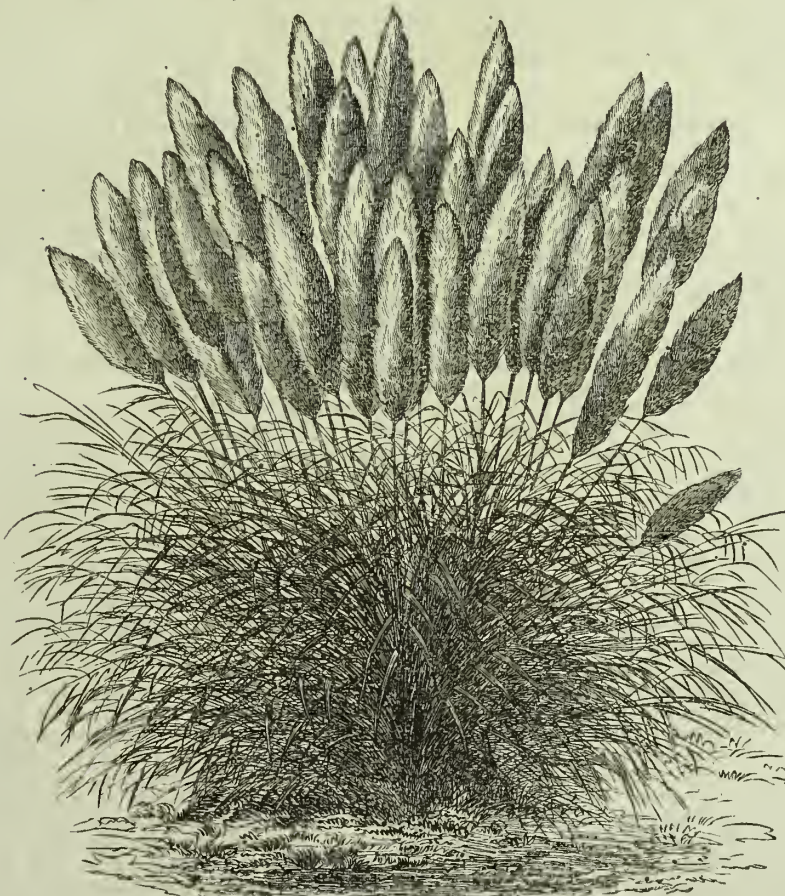
PELTON'S IMPROVED HORSE-POWER.

gummy or other matter, thus saving oil and time, while the machine will run much easier on account of its keeping clean.

The device for attaching the levers and braces is especially useful, as it will allow of all necessary changes in the elevation of the outer extremities of the levers, without in any way affecting the attachment; while

Gynierium Argenteum (Pampas Grass).

The beautiful grass which we here illustrate is a native of the pampas (prairies) of South America; and where known, is one of the most popular, as it is the most showy of all known ornamental grasses. Either in groups or standing alone as single plants it has no rival. Its large, white panicles of flowers from 15 to 30 inches in length, like feathery plumes hang gracefully over from the tops of stems often ten or fifteen feet in height, in their native clime.



GYNIERIUM ARGENTEUM (PAMPAS GRASS).

it at the same time provides a strong, simple and convenient means of attaching these pieces to the horse-power. Owing to the extended surface of the journals the power only needs oiling once a day. The construction of this power is such that, as will be evident to any one familiar with this class of machines, from 25 to 50 per cent. more power can be gained with the same team than any other horse-power will furnish, and it will take at least 30 days' use in driving a threshing machine to get the master pinion cogs bright and smooth, owing to the great extent of bearing surface. This invention was patented through the SCIENTIFIC PRESS Agency by Samuel Pelton, who may be addressed for further information Box 1732, San Francisco, Cal.

MUSTARD SEED.—Boston has eight manufactories for putting up mustard, whose united yearly production amounts to nearly 600 tons; the largest using over 1,000,000 pounds of seeds, which are imported principally from England, Italy and Germany.

As parlor ornaments, the plumes are held in high estimation, for they need no water to preserve them or their silvery beauty for months or years. There are several beautiful specimens of this plant in the gardens of Sacramento, and they seem to flourish there as though the climate was entirely congenial to their growth.

Animal Power.

EDITORS PRESS:—Allow me to ask the following questions, viz:—

1st. Working a horse or an ox all day, how much—taking in account their respective weight—can they pull and not be over worked?

2d. What is equivalent in the working capacity of three oxen, in horse power?

3d. Pound for pound, which will pull most easily, a dead load, like corn, or a springy one, like hay?

T. F. B.

Marengo Ranch, Los Angeles Co.

In the foregoing queries there are a few nice points involved. We once took a contract for hauling wheat by the ton a distance of ten and a quarter miles over a generally level road, but with 2 or 3 elevations and depressions of about a fourth of a mile in length each, and of about equal ascent and descent; other than this, the road was hard and good. We put on two new wagons of the same size and weight, and made by the same man. To one wagon we put a pair of large common farm horses, and to the other a large, good yoke of oxen.

We commenced by hauling a single ton on each wagon, every day with no return load but the empty wagons. Both horses and oxen were fed an equal quantity of ground feed each, and all the good hay they would eat. Both teams left at the same hour in the morning, but the horses would arrive home three hours the first, being able to trot most of the way returning. The distance both ways amounting to twenty and a half miles a day; we found at the end of a single week that the horses—to use a farmers' phrase—held their own, whilst the oxen were losing weight and suffering from fatigue, as they would lie down, almost immediately on being turned out, and sometimes before they had finished their food.

We now hitched on another yoke of oxen, nearly equal in strength to the first; but the result after another week was the same; the four oxen were more fatigued than the two horses drawing equal loads and changing wagons every day from horses to oxen, so that any difference in case of draft would be equalized. It was evident, therefore, that the distance traveled, was what was worrying the oxen and not the weight of the load. We now put two tons upon the two yoke of oxen and wagon and taking one day to go and the next to return; the horses being loaded and going daily as before. After two week's work, the oxen doing the same amount of work as the horses in the same time, were every day improving till the job was completed.

During the whole time, the load for the horses was an even ton weight or averaged that day by day; and with that load, it required full feeding with rubbing down and much care, to keep the horses up to their starting condition. On all good roads we should prefer horses before oxen; but in all bad places or in timbered land, where the labor is logging or getting around among brush and bad places with stumps and rocks or mudholes, the patient ox is to be preferred.

An elastic weight, as feathers or unpressed hay, against a dead weight as corn or lead, pound for pound, the elastic material will draw the easiest. First, because the whole load of the elastic substance does not start at the same instant, and it is easier to start half a load than the whole of it at once; and secondly, because the elastic load will allow of the wheels rising over short inequalities or small stones without crushing them, which if it did crush them would require extra power, because, with the dead weight you would expend the same power in drawing the load proper, and the additional power required to crush the stones. If our correspondent should hold to a different view than we have expressed, we would be pleased to hear from him.

Late Wheat.

We are informed by a gentleman direct from Gilroy, Santa Clara Co., that it is the intention of farmers in that vicinity to sow wheat as late as the tenth of April. Past experience has shown that good crops have been produced from wheat sown on the 6th of April, and they will this year venture 4 days later, under the circumstances.

We learn from the same source with regret, that the Purdy works for the manufacture of syrup and sugar from sorghum, were entirely swept away by the winter floods and completely ruined.

To manure, lime or plaster wet lands without drainage, is to throw manure, lime, plaster and labor away.



A Story for Farmers' Boys.

When I was young I lived on a farm with my parents, and a very good farm it was too, containing over one hundred acres of rich mellow land, off of which we yearly raised fine crops of hay and grain. Living at our right was a man by the name of Richardson, who was about fifty years of age, bearing the name of an excellent farmer, which name he richly deserved, as a person might see on passing his premises, for his buildings possessed that snug, warm look of which only a good farmer can boast, and all of his cattle were in such a condition as to arouse the wonder and admiration of his neighbors, who tried in vain to excel him and often have I heard remarks like this: "I cannot understand how neighbor Richardson has produced so good a farm of that which, when he moved on it, was no better than ours." On our left lived a man by the name of William Stephens, who was very slack in his habits, whose buildings, although newer than Mr. Richardson's, were not to be compared with them in any respect. The floors of his stables and barns were adorned with many a useless airhole, through which one of his best horses broke a leg, and thereby lost his life. His cattle were in very poor condition, and were always getting into his neighbors' grain, for his fences being out of repair, no one could expect otherwise. He usually managed to get to the neighboring village at least once a week to get the liquor he needed to brighten him up, as I think there was nothing about home to cheer him. He was the only son of a wealthy farmer, and while young was allowed to do about as he pleased, and never wished for a thing without it was granted, so that when he became a man, his idle habits, which he attained while young followed him to the grave. As I have given a brief outline of William Stephens' life, perhaps you would like to hear something more of James Richardson. He was the son of a poor cobbler, who provided a scanty living for his large family by toiling day and night on the bench.

James attended school until he was twelve years of age, when he went to live with a man near by, who was in search of a boy to work for him. His master proved to be a very good farmer, and taught James many useful lessons, which he never forgot. At the age of twenty-one he began working for a farmer several miles distant, collecting his wages and using them at his own discretion. At first they were small, but finding him to be steady and honest, in a short time his wages were increased so that he was able to lay by a small amount each year, and in twenty years from the time he began working on his own account, he had accumulated enough to purchase the farm on which he now resided, and still have a small amount left with which he procured the necessary utensils for carrying on the farm. He soon found that his buildings needed more repair than he felt able to pay for; but still he wished to have as good buildings, as any of his neighbors. Here was a fix; he was ambitious to excel, but had no money to proceed with. His first thought was to go to his old employer and ask his advice. "My friend," said he, "I will say what I have refrained from speaking before, but now that you have asked my advice I will tell you frankly what I think, and if you follow it it will be of great service to you. You have indulged in a habit ever since I knew you, which is injurious to your body as well as your purse, which, if you continue, will shorten your days, and if you quit, it may save you a great deal of trouble. Take that tobacco from your mouth, young man, and save the money which you expend each week for it to purchase tools for repairing your building, and depend upon it you will prosper." He followed that old man's advice, and the tools he purchased the next year seemed like a gift to him, and he soon had his buildings in the best of order, and his farm prospered, and he became the wealthiest farmer of the place as we found him at the beginning of the story. Thus, we find the adage true that "Many a little makes a muckle."—*New York Tribune.*

MAKE a slow answer to a hasty question.

What it is to be a Widow.

"I think it must be a jolly thing to be a young widow?" I heard this remark the other day, in a group of laughing girls. I think I remember saying such a thing myself in my girlish times. Do you know, girls, what it is to be a widow? It is to be ten times more open to comment and criticism than any demoiselle could possibly be. It is to have men gaze at you pass, first at your black dress, and then at your widow's cap, until your sensitive nerves quiver under the infliction. It is to have one ill-natured person say, "I wonder how long she will wait before she marries again?" and another answer, "until she gets a good chance, I suppose." It is now and then to meet the glance of real sympathy, generally from the poorest and humblest woman you meet, and feel your eyes fill at the token, so rare that it is, alas! unlooked for. It is to have your dear, fashionable friends console you after the following fashion: "Oh, well! it is a dreadful loss. We know you'd feel it, dear." And in the next breath, "You will be sure to marry again, and your widow's cap is very becoming to you."

But it is more than this to be a widow. It is to miss the strong arm you have leaned upon, the true faith that you know could never fail you, though all the world might forsake you. It is to miss the dear voice that uttered your name with a tenderness that none other could give it. It is to hear no more those well-known footsteps that you flew so lovingly to meet. To see no more the face which to your adoring eyes seemed as the face of the angels of God. To feel no more the twining arms that folded you lovingly; the dear eyes that, looked into your own, said plainly, whatever is said to others, yours was the fairest face earth held for him. It is to fight with a mighty sorrow as a man fights with the waves that overwhelms him, and to hold it arm's length for a while, only to have—in the hours of loneliness and weakness—the torrents roll over you, while—poor storm-driven dove—you see no haven."

Savings for Old Age.

No one denies that it is wise to make provision for old age, but we are not all agreed as to the kind of provision it is best to lay in. Certainly we shall want a little money, for a destitute old man is indeed a sorry sight; yes, save money by all means. But an old man needs just that particular kind of strength which young men are apt to waste. Many a foolish young fellow will throw away on a holiday a certain amount of nervous energy which he will never feel the want of until he is seventy, and then how much he will want it! It is curious, but true, that a bottle of champagne at twenty will intensify the rheumatism at threescore.

It is a fact that over-tasking the eyes at fourteen may necessitate the aid of spectacles at forty instead of sixty. We advise our young readers to be saving of health for their old age, for the maxim holds good in regard to health as well as to money, "Waste not, want not." It is the greatest mistake to suppose that violation of the laws of health can escape its penalty. Nature forgives no sin, no error; she lets off the offender for fifty years sometimes, but she catches him at last, and inflicts the punishment just when and where, and just how he feels it most. Save up for old age, but save knowledge; save the recollection of good and noble deeds, innocent pleasure and pure thoughts; save friends, save love. Save rich stores of that kind of wealth which time cannot diminish nor death take away.—*Ec.*

DEATH.—No one cries when children, long absent from their parents, go home. Vacation morning is a jubilee. But death is the Christian's vacation morning.—School is out. It is time to go home. It is surprising that one should wish life here, who may have life in heaven. And when friends have gone out jealously, I think we should go with them to the grave, not singing mournful psalms, scattering flowers. Christians are wont to walk in black and sprinkle the ground with tears, at the very time when they should walk in white and illumine the way by smiles and radiant hope. The disciples found angels at the grave of Him they loved; and we should always find them too; but that our eyes are full of tears for seeing.—*H. W. Beecher.*

NAPOLEON once asked a lady what France needed for the education of her youth; and the short, profound reply was, "MOTHERS!"

Homekeepers and Housekeepers.

Many persons have very fine and orderly houses, but have, after all, no home, for "Home's not merely four square walls, Though with pictures hung and gilded; Home is where affection calls, Filled with shrines the heart hath builded."

A homekeeper makes all the ways of the house conduce to the comfort of the inmates. She allows the members of her household to build each a shrine, and treats it as sacred, because it is a shrine to the one who has builded it. The daughter is not called an idle thing, because she wishes to know her tune, and gazes wistfully toward the horizon; nor is the son reproved if he slams around and wishes he was anywhere, but idling at home. The homekeeper will quietly aid the first to search for beauty this side the horizon, and the boy will find a vent for his activity without seeing he was gently led to it by an over-seeing love.

A house that is blessed with a homekeeper has an influence that even strangers feel. They receive that rest which comes from the "fitting of self to its sphere." The order of the house may be mechanical like that of a loom or a harp; but like these mechanical things it conduces to results; and justifies itself by tissues of more than silken fineness, and music sweeter than that of the spheres.

If there is a housekeeper the housework is not in utter confusion, if, perchance, one rise an hour too late. A breakfast, such as late risers should expect, is eaten in peace, and not in a hurry of excuses for not having a meal that it was impossible to furnish without inconvenience and discord in the kitchen for the whole day. It is foolish to attempt to keep a restaurant with only the arrangements suited to a small family. The peace of many a family is destroyed by attempting such impossibilities. Realizing that the guest regrets his tardiness, she lets the cold breakfast suffice, but does what she can by word, look and act to make the best of what cannot be helped, and so calls out the gratitude of the late riser, that ever after that breakfast is a bright and pleasant memory; for he feared he was a nuisance, yet without direct word he felt that his act did not discommode the arrangements of the house. Housekeeping can be well done by an energetic woman. Homekeeping requires that the woman's heart and wisdom be greater than her house, and that she keeps the house, only that in it life can be lived with love and truthfulness.—*Western Rural.*

To Make Boys Good Farmers.

The *American Agriculturist* says: Induce them to take an interest in the farm, in the implements, in the stock; tell them all your plans, your successes, and failures; give them a history of your own life, and what you did, and how you lived, when a boy; but do not harp too much on the degenerate character of young men of the present age; praise them when you can, and encourage them to do still better. Let them dress up in the evening, instead of sitting down in their dirty clothes in a dirty room. Provide plenty of light.—Thanks to kerosene, our country homes can be as brilliantly lighted as the gas-lit residences in the city. Encourage neighbors to drop in during evenings. Talk agriculture rather than politics; speak of the importance of large crops, of good stock, of liberal feeding, and of the advantages of making animals comfortable, rather than of the hard times, low prices, and high wages. Above all, encourage the boys to read good agricultural books. Papers are well enough, but an intelligent boy wants something more. Get him some good agricultural book to study. Read it with him, and give him the benefit of your experience and criticism. When he has mastered this, give him another. In our own case, we owe our love for farming principally to the fact that our father told us of everything that he was doing on the farm; answering all the questions, and encouraging rather than refusing our child-like desire of helping him to plow, to chop, to let off water, and fire the brush-heap.

"YOUR DRESS," said a husband to his fashionable wife, "will never please the men." "I don't dress to please men," was the reply, "but to worry other women."

A HANDSOME woman pleases the eye; a good woman the heart. One is a jewel, the other a treasure.

THIRTEEN young ladies have asked to enter the Yale School for Journalism.

Young Folks' Column.

The Cheering Word.

Little Charley was the dull boy of his school. All the rest either laughed at, or pitied him. Even his master tutted him with his deficiencies. He became sullen and indifferent, and took no pains to get on. One day a gentleman who was visiting the school, looked over some boys who were making their first attempt to write. There was a general burst of amusement at poor Charley's efforts. He colored but was silent. "Never mind, my lad," said the gentleman, cheerfully—"Don't be discouraged; just do your very best, and you'll be a brave writer some day. I recollect when I first began to write, being just as awkward as you are; but I persevered and now look here." He took a pen and wrote his name on a piece of paper in fine, legible characters. "See what I can do now," he added.

The gentleman met Charley again. He had turned out to be one of the most celebrated men of his day; and he expressed his firm conviction that he owed his success in life, under God's blessing, to the encouraging speech made by that kind visitor at the school.

The above story, said to be strictly true, contains a valuable hint to the teachers of schools. Most teachers are afraid to praise for fear of being denounced as flatterers. A little judicious praise, accompanying firm discipline, is the best possible stimulant to a child's mental growth.

Another hint to teachers. They should never allow themselves to speak of the faults of their pupils to indifferent ears. Such denunciations are never forgotten, and often do the child incalculable injury after his school days are over, being remembered and whispered around by malicious observers, years after the fault may have been extirpated from the character.—*The Presbyterian.*

Parlor Games

The King on His Throne.

A large easy chair is placed in the centre of the room, in which a young gentleman of the party takes his place as "King." His Majesty first desires the company to be seated on the chairs which have been previously placed in order, close to the walls round the room. He then calls out "One," when all move to the left; taking the seat next to them. "Two," says the King and again they move to the left; "Three," and so on up to any number he pleases, when he suddenly calls out "Homage." All must then rush forward to the throne, and make a polite obeisance, regaining their seats before his Majesty can count twelve; which he commences to do immediately after calling out "Homage." Should the obeisance not be sufficiently respectful to suit his majesty's notions, he again commands "Homage." If any fail to reach their seats at the appointed time, a forfeit may be demanded. It should here be noticed that the King must count rather slowly, or otherwise, according to the size of the room.

To Make an Orange Basket.

Cut away the peel on each side of the top half of an orange, leaving a hand of peel for a handle. With the blade of a knife carefully separate the fruit from the peel. Draw the handle gently aside, and you will be able to take the orange out without cutting or breaking. You can pass round raisins, almonds, etc., in the basket you have thus made.

To Make an Orange Peel Pig.

Fold a half orange peel. Cut out between parts intended for legs. Cut out a notch for a mouth, and a piece of the colored part, leaving white eyes. Slit up and band over pieces for the ears. A small slit can be cut and twisted into shape for the tail. The pig's squeal must be omitted as it cannot be made from fruit.

A WORD TO BOYS.—Boys, did you ever think that this world, with all its wealth and woe, with all its mines and mountains, oceans, seas and rivers; with all its steamboats, railroads and telegraphs; with all its millions of grouping men, and all the science and progress of ages will soon be given over to the boys of the present age—boys like you? Believe it, and look abroad upon your inheritance, and get ready to enter upon its possession. The presidents, emperors, kings, governors, statesmen, philosophers, ministers, teachers, men of the future—all are boys now.

DOMESTIC ECONOMY.

Crumbs of Piecrust—The Grumbler.

The grumbler is one of the most unfortunate of beings; he travels the worst roads, drives the worst horses, drawing the worst vehicle under the sun. He eats the worst dinners, especially at home, and wears the worst clothes of any live man.

He spends most of his thoughts in wondering why he is not Alexis, or the Prince of Wales, or the President of the United States, or the Grand Mogul of somewhere, instead of plain John Smith, Jr.

To the discontented man his wife, heaven help her, is a constant source of annoyance. She is too tall or too short, too grave or too gay, too voluble or too reticent, in fact, it is doubtful whether a companion imported directly from the celestial regions, would be a complete success in his eyes.

If she goes with him to an evening entertainment or for an afternoon visit, he spends the homeward ride in grumbling because she does not sing like Mrs. A., or play like Mrs. B., or dance like Mrs. C., or talk like Mrs. D., and ends by complaining because she is moodily silent, and won't answer him at all.

He wonders why she looks so sad and careworn, why she does not welcome him as gladly, or laugh as cheerily as before marriage; why she has the habit of starting nervously every time he enters the room; and why she does not care to ride, or walk, or talk with him. Poor man! he is continually planting briars by the way! What wonder if he reaps a plentiful harvest of thorns?

Does our grumbler travel, he meets with more hair-breadth escapes, comes in contact with more villainous people who make him the sole object of their vile intentions, which, however, from his superior discernment he succeeds in eluding, than Ledyard or Von Humboldt ever encountered.

The best way to cure a discontented man is to help him complain; agree with him that he is the most unfortunate person living, and he will very soon undertake to prove that he has quite as much to be thankful for as the most of people.

A friend whom I was once visiting had the misfortune to have a husband who was always exaggerating the ills of life. One morning he sat down to breakfast as usual, ate a hearty meal, and just before its close, leaned back in his chair, saying that he was unwell; and forthwith began to deaceat upon his many ailments. He declared that he felt that he was not long for this world; it was his fate, but he was resigned. Here he recounted a number of incidents to prove that an evil genius had followed him from his cradle to the present moment. Said he:

"I must consult a physician immediately."

"Yes," replied his wife anxiously; "you must go to Dr. Cur'em this very day. Start right away, do dear; don't defer; now please don't."

"There, that's just like a woman," replied the husband, "you always think that I can leave my business at any moment."

"But," rejoined the wife, "only think of the danger of delay; you are going to put it off until it is too late. You will die, I know you will! Oh, dear, oh, dear! I know you will," she cried hysterically.

"Well," said he angrily, I can't nor shan't leave my business to-day; so there is no use in making a fuss," and marching firmly to the hat rack he invested himself in coat and hat and left for his place of business.

As he passed out of sight my hostess burst into a merry laugh; and seeing my look of surprised inquiry, remarked, "you know Henry is rather notional, and I find it best to humor him."

I think she was right, for during my stay I heard nothing more of Henry's ailments. His wife's prescription no doubt proved more efficacious than any which Dr. Cur'em could have administered.—*Western Rural*.

LOOK TO YOUR WALL PAPER.—The filthy custom of pasting one wall paper over another till a thickness of an eighth of an inch or more is accumulated is too common, and is attended with the worst consequences. This, as ascertained by the *Lancet*, was the cause of the puzzling offensive smell at Knightsbridge Barracks, England, that recently threatened the whole establishment with fever. The examination of the drains and taking up of the floors revealed nothing, while the introduction of increased means of ventilation left the evil as it was. At last an examination was made of the wall papering, when it was found that one paper was pasted upon another till a thickness was accumulated amounting in one case to fourteen layers. Between these layers there was rotten paste, in which fungi and even maggots germinated; while the wall being hollow, the stench spread into the passages and over the establishment.

APPLE PUFFS.—Peel and core as many sour apples as will be needed, simmer with a little water till tender, then add a half pound of sugar to a pound of apples, let it simmer till the apples become a kind of marmalade; take it up, and when cold put it into puff paste and bake quickly; when done ice it, return to the oven just long enough to turn the icing golden.

How to Make Good Bread.

Put what flour will be needed for two or four loaves, according to the size of your family, into your bread bowl or pan. Make a hole in the middle, pressing the flour compactly up to the sides of the pan, then pour in sufficient boiling water to thoroughly scald and wet about one-half of the flour. When cool stir in one cupful of lively domestic yeast, previously soaked in warm water. Set it near the stove or in a warm place in cool weather, cover closely just before retiring at night, and it will be light by morning, when a teaspoonful of salt, and enough more warm, but not hot, water to wet all the flour must be added; knead it very thoroughly, and set it to rise again. When light, work it again, and put it in the pans to rise for the last time, and as soon as it is light bake in a moderately heated oven. If the oven is too hot at first the bread is apt to get brown on top and bottom too soon, and then it will not be done in the middle. A moderate oven at first is best, increasing the heat gradually until the bread is about half done, when it should be of a steady heat till the bread is done.

The Secret of Baking Bread.

The grand secret and mystery in having the bread come out of the oven delicious, inviting and nutritive, is the exact point of time in putting it in. While in the state of dough it will readily run into various stages of fermentation—the first of these is saccharine, or that which produces sugar—the next is the vinous—the third the acetous, or that producing vinegar, etc. If the dough be formed into loaves, and placed in the oven before the first fermentation has taken place, the bread will turn out heavy. If it be kept from the oven until the second fermentation, it will prove light enough but tasteless, and little better than the same quantity of saw-dust. If it be delayed until the acetous fermentation had occurred, it comes out sour, and altogether uneatable.

It is, then, during the first or saccharine fermentation that it should be cast into the oven; and it will, if sufficiently baked, be found a sweet and wholesome food. That bread should be without sweetness, when allowed to run into the vinous fermentation is very easily explained—the saccharine matter produced by the first fermentation being converted into a vinous spirit, which is driven off by evaporation during the process of baking. This kind of bread may be easily distinguished without tasting, by its loose, open appearance—the pores or cells being very large—whereas, really good bread is marked by fine pores, and a sort of net work in uniform appearance.

A FRENCH BROIL.—Select a spider or saucepan with a smooth, clean bottom, set it over the range or stove until really hot, and then lay on a good tenderloin or sirloin steak; keep the spider very hot, and turn the steak as often as every two minutes—no longer; when done sprinkle over salt and pepper to suit the taste of those who are to eat it; continue to turn the steak often till sufficiently done; just as you are to take up and dish the steak dust a little flour over it, spread on a tablespoonful of butter, or, if a large steak, a little more; turn it over, dust on more flour, and spread on the butter as on the first side; turn again, set the saucepan back from the hot fire, take the steak on to the platter, and set in heater or oven to keep hot, but not to cook any more; shake more flour into the butter in the saucepan, set again over the fire, and as soon as the butter bubbles up through the flour, rub it smooth with a spoon, and pour in a few spoonfuls of boiling water, and as soon as it thickens pour over the steak and serve hot.

KNOW HOW TO LIVE.—Prof. Blot can never teach you this. Books on cookery will never enable you to learn the secret. Care and experience only will enable you to attain such a desirable end—they are as essential to good housekeeping as to any other duty.

It would seem ridiculous for a man to attempt to do business without going to his office and knowing, from day to day, what is being done there.

The extravagance of living is not all in high prices, or high rents. It is in waste. Take a house full of the best servants, and if the mistress is always occupied with company, or engagements away from home, what hope can she have that her servants will be careful. They get no credit for it. Their work seems well done, as far as it is likely to meet their mistress' eyes, as she passes from her chamber to the parlor or dining room; and knowing that she will not search out their shortcomings any further, they save themselves trouble by slighting all that is under the surface.

We forget that our servants are human; and conscientious, and well-meaning as we may be, are we sure if we were in their subordinate position, we should do any better?

Be better housekeepers. Look more carefully after your homes and home cares, and there will be fewer hotels and crowded boarding-houses, and more happy husbands, and well-trained children, and less distress on the part of uneasy women because they have not enough to do.—*Home Monthly*.

TO CLEAN SMOKY MANTELS.—A strong solution of alum and water, applied while hot, will, it is said, effectually clean a smoky mantel. When dry, it should be sand-papered and receive one coat of paint.

How Summer Suits Should be Washed.

Summer suits are nearly all made of white or buff linnen, pique, cambric or muslin, and the art of preserving the new appearance after washing is a matter of the greatest importance. Common washerwomen spoils everything with soda, and nothing is more frequent than to see the delicate tints of lawns and percales turned into dark blotches and muddy streaks by the ignorance and vandalism of a laundress. It is worth while for ladies to pay attention to this, and insist upon having their summer dresses washed according to the directions to which they should be prepared to give their laundresses themselves. In the first place, the water should be tepid, the soap should not be allowed to touch the fabric; it should be washed and rinsed quick, turned upon the wrong side, and hung in the shade to dry, and when starched (in thin boiled, but not boiling starch) should be folded in sheets or towels, and ironed upon the wrong side, as soon as possible. But linen should be washed in water in which hay has been boiled, or a quart bag of bran. This last will be found to answer for starch as well and is excellent for print dresses of all kinds, but a handful of salt is very useful also to set the colors of light cambrics and dotted lawns; and a little beef's gall will not only set, but brighten, yellow and purple tints, and has a good effect upon green.—*N. Y. World*.

PICKLES.—If Hippocrates could escape from the dominions of Pluto and visit this country of pickles, pancakes and hot bread, and contemplate the consequent pasty faces, hot breaths and toothless gums, he would every where meet with, he would see just cause to undertake the *communis* of his maxim. He would see people, sensible in other respects, munching pickles as boys munch apples, filling themselves with hot new bread, and meat with all its juices dried up, which by way of destroying the efficiency of nature's solvent, the saliva, diluting it at every mouthful with water or other liquid, and to crown all, taking bodily exercise in an inverse ratio, to the amount of food swallowed—we might fancy that dyspepsia and indigestion would be seen holding high carnival over every barrel of pickles which *pater* or *mater familias* provides to correct the greasy messes of the frying-pan. Thus we find, as one crime leads to another, so one error causes many—remove the superabundant grease, and there will be no need for a peck of pickles—probably the safest and surest plan would be to knock the bottom out of the frying-pan which is the father or mother of nearly all the ills the belly is heir to. There are more constitutions ruined by the frying-pan than by the whisky barrel; indeed, the former leads to the latter.—*Ex.*

PICKLING CUCUMBER PICKLES IN BRINE.—If they are dirty or sandy, wash them by throwing water over them, but do not rub them if it can be avoided. Put the pickles, as soon as picked, into clean barrels only, avoiding kerosene or greasy barrels especially, even if burned out. Fill up the barrel and gently shake them down; then put on brine made of fifteen gallons of water and a half bushel of common fine salt. This is sufficient for all that can be put into a forty gallon barrel; then trim off the edges of the barrel head, and lay on it the pickles, and put on two bricks, or a small stone, to keep the pickles under the brine all the time.

Examine the barrels daily, to see that the brine does not leak or soak away, and leave the pickles out of the brine. If the pickles need more brine, put it on. Fill up the barrel every ten days until you have added one more bushel of pickles. See that the pickles are kept under the brine all the time; and when ready to ship, pour off two gallons of brine, and nail a piece of board crosswise over the head and they are ready to send to the depot. *Western Rural*.

MRS. SNOW'S CREAM CAKES.—One cup of boiling water, one-half cup of butter, put this on the stove, when boiling add one cup of flour, stir it five minutes, set away till it is almost cold, then stir in one egg at a time till you get in five eggs, then take a piece of soda the size of a pea dissolved in a teaspoonful of cold water, and put it in the mixture. Heat your tin hot that you are to bake your cakes on, grease it, drop your cakes on, bake twenty-five minutes, and do not take them off the tin till they are cold. Have your oven hot to commence with, and when the cakes are almost done let it cool a little.

For the Cream.—One pint of milk, one cup of sugar, one-half cup of flour, two eggs. Beat the eggs, sugar and flour together, put the milk on the stove to heat it, then stir the mixture into the milk slowly and when it boils to thicken take it off and let it cool before putting in the cakes.

CIDER WITHOUT APPLES.—Water, 1 gal., common sugar, 1 lb., tartaric acid, 1 oz., yeast, 1 tablespoonful; shake well; make it in the evening and it will be fit for use the next day. In quantities for bottling up, put in a barrel 5 gallons of hot water, 30 lbs. common sugar, 3/4 lb. of tartaric acid, 25 gallons cold water, 3 pints hop or brewer's yeast, worked into paste with one pt. water and 1 lb. flour. Let it work in the barrel 48 hours, the yeast running out at the bung all the time, putting in a little occasionally to keep it full, then bottle, putting in 2 or 3 broken raisins to each bottle, and it will nearly equal champagne.



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CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., April 4.

FLOUR—We note a fair local demand with a limited inquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 2,000 Oregon extra. We quote prices as follows:

Superfine, \$4.50@5.25; extra, in sacks, of 196 lbs. \$5.50@6.25. Standard Oregon brands, extra, may be quoted at \$5.75@6.25.

WHEAT—The market is quiet with free offerings and light demand. Sales aggregate 20,000 sacks fair to choice at \$1.75@2.00 per 100 lbs. Quotable at close at \$1.60@1.95 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 8d. @ 11s. 10d. per cental.

BARLEY—Market quiet. Sales embrace 10,000 sacks ordinary coast to choice bay, at \$1.30@1.50, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.60@1.75 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.50 for yellow and \$1.55 for white per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is jobbing at \$2.25 per 100 lbs.

RYE—According to quality is quotable at \$2.25 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Selling at \$25.00 per ton from the mill.

MIDDINGS—For feed, are selling at \$30.00 per ton from mills.

OIL CAKE MEAL—Steady at \$35 from the mill.

HAY—Receipts have been fair, and prices at close are \$16.00@23.00 for fair to choice per ton.

HONEY—We quote Los Angeles and San Diego in comb at 23@25c, and strained 15@16c. Potter's in 2-lb cans, \$4 per doz.

POTATOES—Market heavy for all kinds. Best Petaluma and Tonales are very dull at 30@50c. Humboldt, 60@80c. Range is from 35c to \$1.00.

HOPS—The range is 50@65c.

HIDES—During past week 2,320 Cal. dry sold at 19@21, and 1,950 salted at 9@9½c. 528 Murrain at 11@13c per lb.

WOOL—Spring clip is beginning to come forward more freely but rates are not yet fixed. Some good lots were sold Tuesday at 45@47½. Sales included 60,000 lbs. fall, and 25,000 lbs. spring at private rates; also 9,000 lbs. Australia at 60c. Clean spring is quotable at 40@50. Market is generally firm.

TALLOW—Market quiet at 8½@9c. per lb.

SEEDS—Flax 3c; Canary, 6@7c; Alfalfa, 16@20c; Mustard—California Brown, 3@6c; Cal. White 3½@4½c. per lb.

PROVISIONS—California Bacon 13@14c; Oregon, 13½@14c. Eastern do. 12½ for clear and 14½ for sugar-cured Breakfast; Cal. Hams 14½@15; Oregon, 15½@16c; California Sugar-cured Hams, 16c; Oregon do. 17@18c; Eastern do. 15@16c; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3@3.15; small White \$2.87½@3.00; Small Butter \$2.50@2.75, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.30@3.50; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$3.00@4.00 per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Cal. Walnuts, 14@15; Hickory, 12c; Brazil, 16c; Chili Walnuts, 11c; Italian Chestnuts 25@30c; Eastern Chestnuts, 12@20c; French Almonds, 22@25c; Princess Almonds, 30@35c; Coconut, \$5.00@6.00 per 100.

FRESH MEAT—Market has been firm since last report. Choice beef is scarce, veal lower and lamb unchanged. Mutton is scarce and higher for the reason that sheep raisers do not wish to sell now that wool is expected to be so high for a year or two. We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 12@13 per lb. do. 2d quality 9@11c per lb.; do. 3d do. 5@5½.

VEAL—Quotable at 8@12½c.

MUTTON—7c. per lb.

LAMB—Scarce at 12½c.

PORK—Undressed grain-fed is quotable at 7½@8c. dressed, grain-fed, 10@10½c. per lb.

POULTRY—Live Turkeys, 20@22c. per lb.; dressed, 22@25 per lb.; large Hens 10@10½; Roosters, \$10.00@10.50 per dozen; Spring Chickens, \$9.00@10.00; Ducks, tame, \$12.00@13.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50. English Snipe, \$2.00@2.50; Small Ducks, \$1.50@2.00; Wild Geese, \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in heavy supply; it may be quoted at 20@26½c; fancy dairies 27½c; California firkin butter, 20@25c. Pickled, 18@20c. Eastern firkin, 20@27½c. per lb.

CHEESE—California, 15@17c, Eastern, 19c@22½ per lb.

EGGS—California fresh, 30@32½c. per doz.

LARD—California 12½@13½; Oregon in bbls.

and kegs 12@12½c.; Eastern in cases 14@14½c.; do in tcs. 11½@12c. per lb.

FRUIT.			
Tah. Oranges, M.	17 50@20 00	Bananas, bunch	2 00@3 00
Callifornia do.	8 50@35 00	Apples, eating, box	1 50@2 50
Limes, M.	20 00@25 00	do cooking, box	1 50@2 50
Australian Lemons, M.	7 00@9 00	Pears, box	1 50@2 00
Sichu do M.	8 00@12 00	Pineapples	1 00@2 00
Cal. do M.	25 00@30 00	Strawberries	20 30

DRIED FRUIT.			
Apples, per lb.	6½c @ 8c	Pitted, do per lb.	20 @ 22
Pears, per lb.	7 @ 9	Raisins, per lb.	5 @ 15
Apricots, per lb.	7 @ 9	Black Figs, per lb.	7 @ 9
Plums, per lb.	9 @ 10	White, do	15 @ 20

VEGETABLES.			
Cabbage, per lb.	2 @ 2½	Marf. Squash, ton	—
Garlic, per lb.	1½ @ 2	Asparagus, per lb.	6@7c
Rhubarb, per lb.	5 @ 8	New Potatoes, per lb.	3@4c
Green Peas, per lb.	5 @ 6	Tomatoes, per lb.	—

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles; under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is active for most all kinds. Burlap sacks 17c.; Flour sacks 10½@11c. for qrs. and 16@16½c. for hfs. Standard Gummies are nominal at 20@21c.; Wool 75@80c.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very fair demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do dressed \$25; Spruce \$17@18; Redwood \$16; refuse \$12; dressed do. \$30; refuse do. \$20. We quote Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$12.50@15; Cedar \$50@55. Redwood Lumber Association's prices are as follows:

Merchandise worked rustic,	\$31 00 to \$32 50
Refuse do do	20 00 to 21 50
Merchandise surfaced and rough clear	28 00 to 30 00
Refuse surfaced and rough	18 00 to 20 00
Merchandise beaded flooring	28 00 to 30 00
Refuse do do	18 00 to 20 00
Merchandise rough	15 00 to 16 00
Refuse do do	11 00 to 12 00
Pointed Pickets	15 00 to 16 00
Rough Pickets	13 00 to 14 00

The mill price for cargo lots from Northern Ports is \$9.00@10 for timber, and \$17.50@20 for flooring.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manilla, 19½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c. @ 5½c, and in cases at 9c; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-b cans respectively; Pickled Cod, \$1.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, hf bbls, new, per rail, \$13; do in kits, \$3; extra mess do, \$5; Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$5 50@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50. Eastern \$1.75 per ream.

PAINTS—Red and White Lead at 8@12½c; Whiting, 2½c; Chalk 2c; Paris White 3c; Ochre 3@3½c; Venetian Red 3@5c; Litharge 9@11c. per lb.

RICE—Sales of China No. 1 at 7½@8½c. and No. 2 at 7@7½c per lb; Siam, quotable at 6½@7½c in mats; Carolina Table, 10@11; Hawaiian, 9c per lb.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Yellow Coffee and Golden C. 10½@11c; Hawaiian 7½@10c as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@5¼; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; Coarse, \$18@19.

SOAP—The prices for local brands are 5@10c, and Castile, 12@13c per lb.

TEA—We quote Young Hyson at 85c@1.15; Gunpowder, 95c@1.50; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c@1.00; English Breakfast Congou, 50@85c; Basket 60@70c. per lb.

Leather Market Report.

[Corrected weekly by Dooliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, April 4, 1872.			
SOLE LEATHER.—The demand is still equal to the supply, and prices still continue firm.			
City Tanned Leather, per lb.	26@28	Santa Cruz Leather, per lb.	26@28
Country Leather, per lb.	25@26	Stockton Leather, per lb.	26@28
French skins are firmer with an advance in some grades. Heavy California skins are firm, with an upward tendency.			
Jodot, 8 Kil., per doz.	\$80 00@90 00	Jodot, 11 to 18 Kil., per doz.	\$90 00@90 00
Jodot, second choice, 11 to 15 Kil., per doz.	\$80 00@90 00	Lemoine, 16 to 18 Kil., per doz.	\$75 00@77 50
Levin, 12 and 13 Kil., per doz.	\$80 00@70 00	Cornellian, 16 Kil., per doz.	70 00@70 00
Cornellian, 12 to 14 Kil., per doz.	60 00@68 00	Oregon Cal., 7½ doz.	51 00@51 00
Simon, 18 Kil., per doz.	65 00	Simon, 20 Kil., per doz.	60 00
Simon, 24 Kil., per doz.	72 00	Robert Cal., 7 and 8 Kil.	35 00@40 00
French Kips, per lb.	1 10@1 30	California Kip, all colors, per doz.	60 00 to 80 00
French Sheep, all colors, per doz.	15 00	Eastern Cal. for Backs, per lb.	1 15@1 25
Sheep Roans for Topping, all colors, per doz.	9 00@10 50	Sheep Roans for Linings, per doz.	5 50@6 50
California Russet Sheep Linings, per doz.	1 75@5 50	Best Jodot Cal. f Boot Legs, per pair.	5 25
Good French Cal. Boot Legs, per pair.	4 50@5 00	French Cal. Boot Legs, per pair.	4 00
Harness Leather, per lb.	30 00@37 50	Fair Bridle Leather, per doz.	48 00@72 00
Skirting Leather, per lb.	34 00@37 50	Welt Leather, per foot.	30 00@50 00
Buff Leather, per foot.	18@21	Wax Side Leather, per foot.	18@20

San Francisco Retail Market Rates.

THURSDAY NOON, April 4, 1872.

MISCELLANEOUS.			
Butter, Cal. fr. lb.	30 @ 40	Wheat-sks, 22x36	12 @ 13
Pickled, Cal. fr. lb.	30 @ 35	Potato G's Bags.	22 @ 21
do Oregon, lb.	25 @ 30	Second-hand do	15 @ 15
Honey, per lb.	25 @ 30	Deer Skins, per lb.	15 @ 22
Cheese, per lb.	25 @ 30	Sheep skins, plain, 12x25	25 @ 25
Eggs, per doz.	35 @ 40	Goat skins, each.	25 @ 50
Lard, per lb.	18 @ 20	Dry Cal. Hides.	18½ @ 19
Sugar, er., 7 lb. 10 lb.	9 @ 13	Salted do.	— @ 9½
Brown, do, per lb.	9 @ 13	Dry Mex. Hides.	17½ @ 17½
Sugar, Map. lb.	25 @ 30	Salted do.	9½ @ 9½
Plums, dried, lb.	15 @ 30	Codfish, dry, lb.	10 @ 12½
Peaches, dried, lb.	20 @ 30	Live Oak Wood.	9 50@10 00
Wool Sacks, new	67½ @ 70	Tallow,	8½ @ 10
Second-hand do	67½ @ 70		

PRODUCE, ETC.

Flour, ex, per bbl.	6 75 @ 7 00	Barley, cwt.	1 50 @ 1 65
Superfine, do.	6 00 @ 6 25	Beans, cwt.	3 50 @ 4 50
Corn Meal, 100 lb. box	63 50 @ 65 00	Dry Lima Beans	10 @ 10
Wheat, per 100 lbs.	62 50 @ 63 00	Hops, per lb.	17 00 @ 25 00
Oats, per 100 lbs.	1 75 @ 2 00	Potatoes, per cwt.	7½ @ 12½

FRUITS, VEGETABLES, ETC.

Pine Apples, per doz.	50 @ 60	Tomatoes, per lb.	25 @ 25
Bananas, per bunch	50 @ 60	Cress, per doz. hbs.	20 @ 25
Cal. Walnuts, lb.	10 @ 20	Dried Herbs, b's	25 @ 50
Strawberries, per lb.	25 @ 30	Garlics,	5 @ 5
Cranberries,	25 @ 30	Green Peas, per lb.	10 @ 12½
Pears, table, per doz.	25 @ 30	Lettuce, per doz.	12 @ 25
Plums, Cherry,	6 @ 8	Horseradish, per lb.	20 @ 20
Oranges, per 100, 20 lb.	20 @ 30	Okra, dried, per lb.	50 @ 50
Lemons, per 100, 5 lb.	50 @ 60	Pumpkins, per lb.	3 @ 4
Amber, per 100, 2 lb.	20 @ 30	Parsnips, per lb.	20 @ 25
Figs, dried, per lb.	65 @ 65	Pickles, per gal.	50 @ 100
Artichokes, doz.	75 @ 100	Rhubarb, per lb.	8 @ 12½
Russell's sprts.,	10 @ 12	Radishes, per lb.	10 @ 15
Beets, per lb.	12 @ 12	Red do.	25 @ 25
Potatoes, sweet,	6 @ 6	Hubbard, do.	4 @ 4
Broccoli, per doz.	1 50 @ 2 00	Dry Lima, sh.	6 @ 8
Cauliflower,	1 00 @ 1 50	Spinage, per bkt.	25 @ 50
Cabbage, per doz.	1 00 @ 1 50	Salsify, per bunch	12 @ 25
Carrots, per doz.	1 00 @ 1 50	Turnips, per doz.	15 @ 15
Celery, per doz.	75 @ 75		

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, piece	87½ @ 87½	Hans, Crows, a o	— @ 25
Turkeys, per lb.	40 @ 40	Choice D. Field	— @ 25
Ducks, wild, per lb.	40 @ 40	Whittaker's	— @ 25
Tame, do.	25 @ 25	Johnson's Or.	— @ 25
Teal, per doz.	60 @ 60	Flounder, per lb.	12 @ 15
Geese, wild, pair	75 @ 100	Salmon, per lb.	12 @ 15
Tame, per pair	75 @ 100	Marron, per lb.	12 @ 15
Hens, each.	75 @ 100	Pickled, per lb.	6 @ 10
Snipe, per doz.	1 50 @ 2 00	Rock Cod, per lb.	12 @ 15
English, do.	2 50 @ 3 00	Perch, water, lb.	10 @ 12
Anils, per doz.	50 @ 50	Fresh water,	15 @ 15
Pigeons, dom. pair	60 @ 60	Live Fish, Trout	— @ 15
Wild, do.	2 00 @ 2 00	Sinets, large per lb.	8 @ 10
Hares, each	40 @ 50	Small do.	— @ 10
Rabbits, tame, 1 lb.	25 @ 30	Silver Smelts.	15 @ 15
Wild, do. 1 lb.	25 @ 30	Soles, per lb.	30 @ 35
Squirrel, per pair	20 @ 20	French Trout	— @ 10
Beef, tend, per lb.	18 @ 22	Sin'kl, per 100	— @ 100
Corned, per lb.	10 @ 12	Toncod, per lb.	25 @ 25
Smoked, per lb.	15 @ 18	Trout, per lb.	20 @ 20
Pork, rib, etc. lb.	15 @ 15	Mackerel, per lb.	— @ 15
Chops, per lb.	15 @ 15	Spa Bass, per lb.	— @ 15
Veal, per lb.	15 @ 15	Halibut,	— @ 75
Outlet, do.	12 @ 15	Sturgeon, per lb.	— @ 8
Mutton chops,	12 @ 15	Oysters, per 100.	1 00 @ 25
Leg, per lb.	15 @ 18	Crabs, per doz.	40 @ 50
Lamb, per lb.	15 @ 18	Soft Shell.	— @ 50
Tongues, beef,	15 @ 15	Crabs, per doz.	1 00 @ 50
Bacon, Cal., per lb.	18 @ 20	Soft Shell.	— @ 50
Oregon, do.	16 @ 18	Shrimps,	12 @ 15
Hams, Cal., per lb.	16 @ 18	Prawns,	— @ 15

* Per lb. † Per dozen. ‡ Per gallon.

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.]

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, April 4, 1872.			
Iron—			
Scotch and English Pig Iron, per ton.	\$55 00 @ 60 00		
White Pig, per ton.	45 00 @ 45 00		

Splendid Farm For Sale.

160 ACRES

Near Elk Grove, Sacramento County, with House, Windmills, Farming Implements, small Orchard, and Vineyard. Title perfect. 80 acres in volunteer, 80 in pasture. Price \$2,400. \$1,200 can remain at 1 per cent.

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14v3-1m 49 Front street, Sacramento.

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IMPROVED STEAM WATER LIFTER,
With neither Engine, Piston, or Plunger.



The most Simple, Durable, and in all respects the most Economical of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List. Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

Every Description of **Machinery**
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FOR THE HARVEST OF '72. INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers, Kirby's Mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

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12v3-cow16p

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The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

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The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have hitherto recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

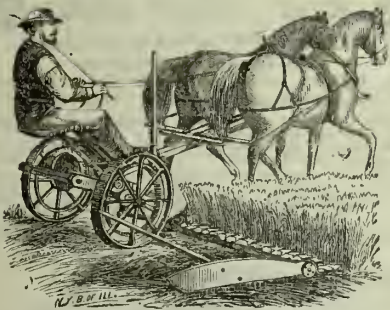
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THE WALTER A. WOOD

Mowing and Reaping Machine Co.

Will sell a First-Class MOWER, REAPER or COMBINED MACHINE, for a Less Price than any other First-Class Machine is sold on this coast.

A Full Stock of EXTRAS constantly on hand for all our Machines.

Also, all kinds of EXTRAS for Wood's Improved Haines' Header.

Branch Office, 112 and 114 Front street, San Francisco.
E. S. WHITCOMB,
General Agent.

14v3-cow-2m

Stallions.

STATE PREMIUM STALLION—YOUNG RAWLEY. This fine young Norman Stallion will make the ensuing season as follows: At Plover's Stable, Petaluma, every day from 8:30 A. M. to 4 P. M. At our ranch, near Liberty School House, daily, from 5 P. M. to 6:30 A. M. Single service, \$10, in advance; season, \$15, payable within the season, in U. S. gold coin. Season to commence April 1st, and closing July 1st. "Young Rawley" is a coal black, 17 hands high, is nine years old, and weighs 1,650 pounds. He took the First Premium at the State Fair in 1868 and 1869, and in 1870, at Bay District Fair, San Francisco, for draft horses. Sired by "Rollins," he by "Robert Suscard," out of "Normandy." Imported from Normandy, France, by Erasmus Martin and Benjamin Gorton, of Ohio Landing, in N. Y., Feb., 1857. Dam—"Lady Jane Mas," by "Louis Napoleon," out of a Sherman Morgan mare. Good pasturage at \$2 per month, and duo care taken to prevent accidents or escapes, but no liabilities assumed.
A. & H. WILSEY, Prop'r's, Petaluma.

PREMIUM DRAFT STALLION—YOUNG RAWLEY, JR. This fine young Norman and Eclipse Stallion will stand the ensuing season for a limited number of Mares, at Charles Hatzel's Ranch, Suscol Valley, Alameda county. Single service, \$10, in advance; season, \$15, within the season, U. S. coin. Season to commence April 1st and closing June 30th. "Young Rawley, Jr." is a coal black, 17 hands high, is four years old next May, and weighs 1,500 pounds. He took the Premium for the best two-year old, at the Bay District Fair, San Francisco, for draft horses, in 1870; and at the Sonoma and Marin District Fair, Petaluma, in 1871, for the best three-year old draft. He was sired by the well-known Norman horse, "Young Rawley." His dam, "Queen," was a thoroughbred Copper-Bottom and Eclipse. She took two successive sweepstake Premiums at the Sonoma County Fairs. A. WILSEY, Proprietor, JOB PEASLAND, Agent. 13v3-1m

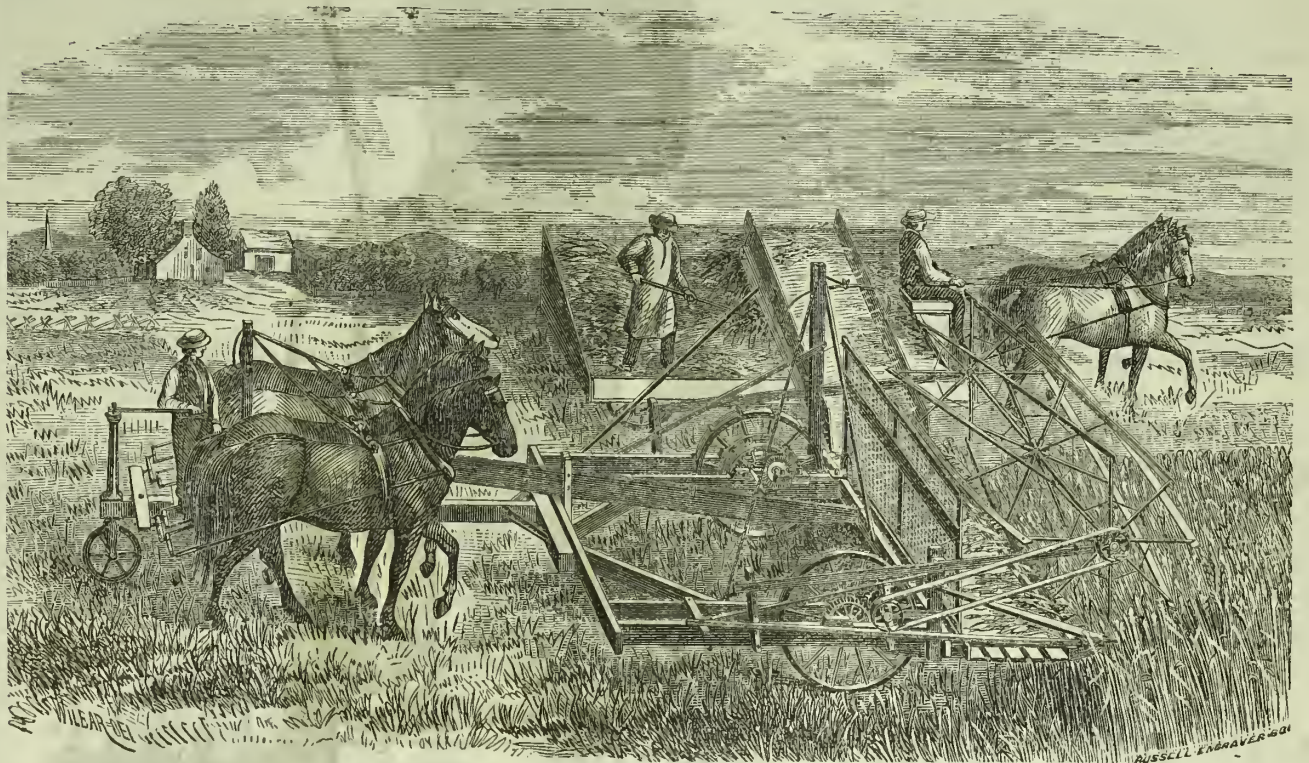
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Hoadley's Portable Threshing Engines,



Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

These Machines MUST be sold, and the supply being limited, and prices at first cost, they will be disposed of at an EARLY DAY. Farmers who intend to buy Harvesting Machines for this season, would do well to order now, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. **DON'T FAIL TO GET OUR PRICES BEFORE ORDERING.**

TREADWELL & CO.,

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v3-3m

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COPPER-RIVETED
HORSE COLLARS.**

Warranted never to break or give way at the Rim.

Go and look at them at the nearest Harnessmaker's or General Store, or send for a Circular to

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104 and 106 Front Street,SAN FRANCISCO,

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6v3-3m

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FRUIT, PRODUCE,
And General Commission Merchant,
313 and 315 Washington street,
Between Front and Battery.....SAN FRANCISCO.**

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21v2-1y



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REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted. 11v3-1f

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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

Patent Sheep Wash,



Prepared and manufactured expressly by HUGH SMITH—a certain and infallible REMEDY FOR SCAB IN SHEEP, and sold at the low price of 25 Cents per Gallon. Orders from the country promptly attended to. A cure guaranteed or no pay. Orders may be sent to the Patentee, No. 18 Lewis street, between Taylor and Jones and Post and Sutter, or Messrs. Miller & Co., 10 Davis street, San Francisco. 12v3-1m

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Wool Graded, Packed and Shipped for Eastern buyers on reasonable terms.

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317 Washington Street.....SAN FRANCISCO.

The Proprietor having upwards of
100 ACRES OF NURSERY GROUNDS,
well stocked with all the leading and best varieties of
Fruit Trees and Fruit Bushes; also Evergreen and De-
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ters, can fill all orders on the most reasonable terms
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Choice Roses and Pot Plants
of every variety. Trees and Plants securely packed to
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of Australia, Europe, China and Japan; in fact, we aim
to have and to get all and everything desirable.
Parties planting can find in this establishment what-
ever may be wanted, for use and beauty, in furnishing a
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12v3-3m

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GLEN GARDENS,

ONE MILE EAST FROM SACRAMENTO.

My stock embraces all the celebrated varieties that
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TINGS of the leading sorts; 100,000 Blackberry and
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true to name; Mulberry Trees, for feeding Silkworms,
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Has constant
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a large assort-
ROSES too nu-
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AUSTRALIAN GUM TREES.
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Of various varieties, including BLUE GUM, RED
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Has for sale 5,000 Blue Gum, 20,000 Cypress, a choice
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FRUIT AND SHADE TREES.

Evergreens, Ornamental,
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All varieties of Fruit, from the earliest to the latest in
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Prices to suit the times. Wholesale and retail.
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SHADE TREES! SHADE TREES!

LOCUST, LOMBARDY, POPLAR, CIRCASSIAN
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Walnut, Wild Cherry, Weeping Willow, etc., grow-
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steamers, or to any part of the city, without additional
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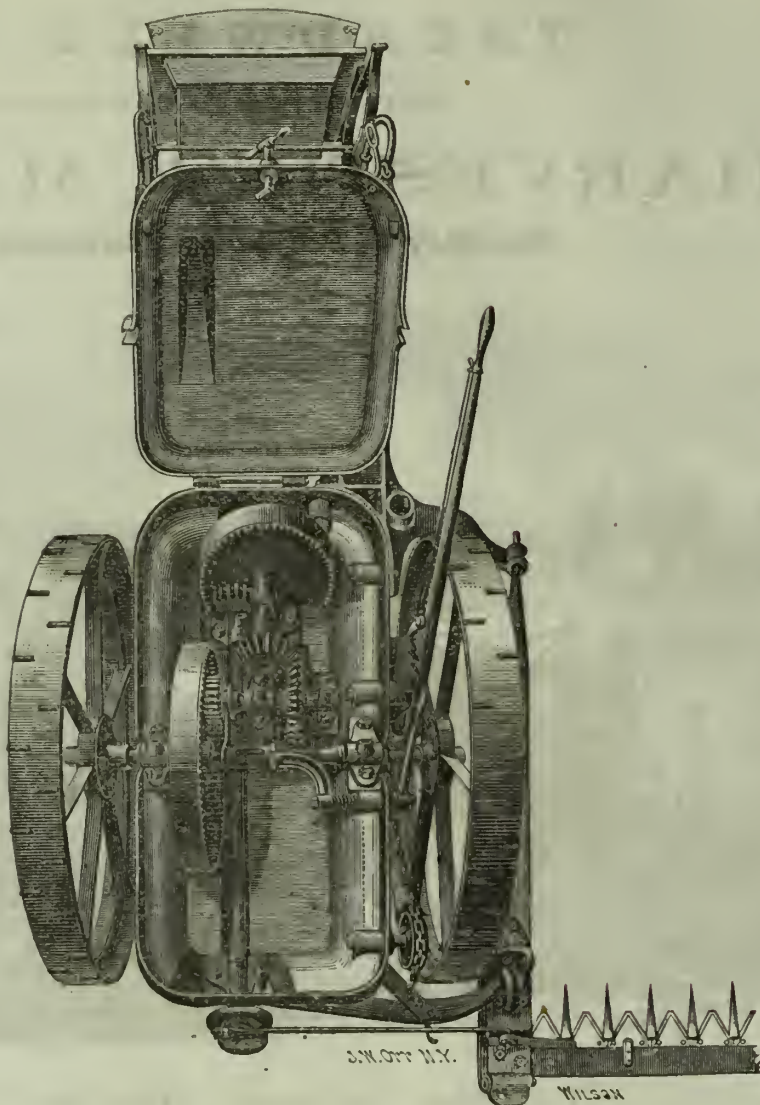
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The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Ma-
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By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-
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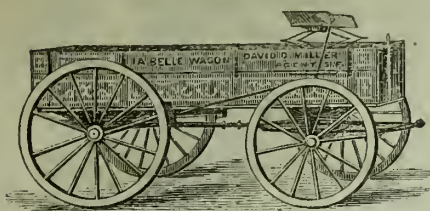
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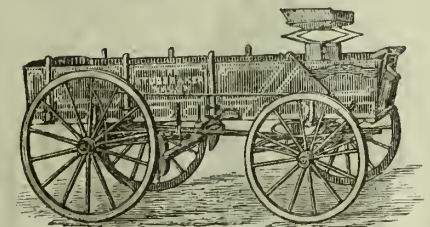
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Have become

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LIGHT RUNNING,
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AND EXCELLENT STYLE,
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IRON AXLE,
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Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

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Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.

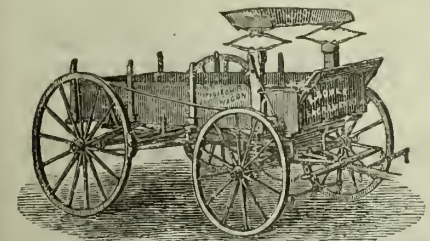
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We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed)

JAS. SPIERS,
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From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGEL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump, of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents.—See official Report of the above Committee.]

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The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

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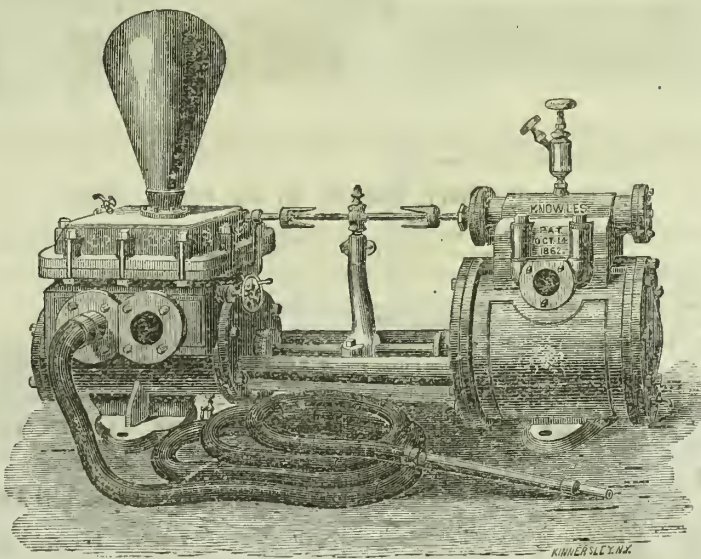
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It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

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A. L. FISH, Esq., Agent of the Knowles' Steam Pump, San Francisco—Dear Sir: In reply to your inquiry as to the merits of the Knowles' Steam Pump, in use upon this road, I will say that we have nineteen of them in use on this road as fire engines, and pumping water for shop and station use. I consider the Knowles Steam Pump the best in use, and prefer it to any other. Yours truly, A. J. STEVENS, General Master Mechanic.

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BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed)

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EUREKA GANG PLOW,

The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted.

They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

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This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

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For the Cure of Polson Oak.

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Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England.

Also ten Rams, and thirteen Ewes and Lambs, Silurian Sheep.

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5v3tf

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Manufacturer of Brooms, Brushes, Baskets, Matches and General House Furnishing Goods, and sells Nichols & Falvy's Tubbs and Pails. 16v23-3m

From an Old Inventor.

MARYSVILLE, Cal., March 2, 1872.—Messrs. DEWEY & Co., U. S. and Foreign Patent Attorneys, San Francisco. My Patent, through your Agency, is received. Please accept my warmest thanks for the ability you displayed in obtaining it. Thirty years experience in inventing and obtaining patents has taught me the lesson that that patent agency is the cheapest which has the most ability, integrity and energy; and without flattery, permit me to say that I have tried the most prominent patent agents of the Atlantic Coast, and have never had my work so ably done as by your firm. I have carefully reviewed the specifications and claims of my patent, and am unable to find an error, nor would I add a word or line thereto; yet it is the most complicated and difficult invention to specify clearly that I ever invented; still, your lucid specifications and drawings so direct it of its apparent complication, that it may easily be understood by any one. Permit me to say, in conclusion, that the inventors of this coast have cause for just pride in the possession of so able a medium as DEWEY & Co., through which they may obtain justice at the Patent Office.

10v3-lam3t

Yours truly, S. PELTON.

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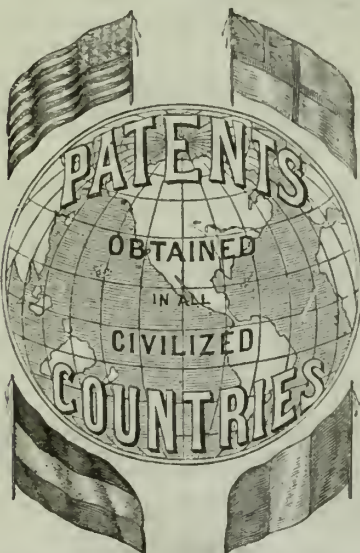
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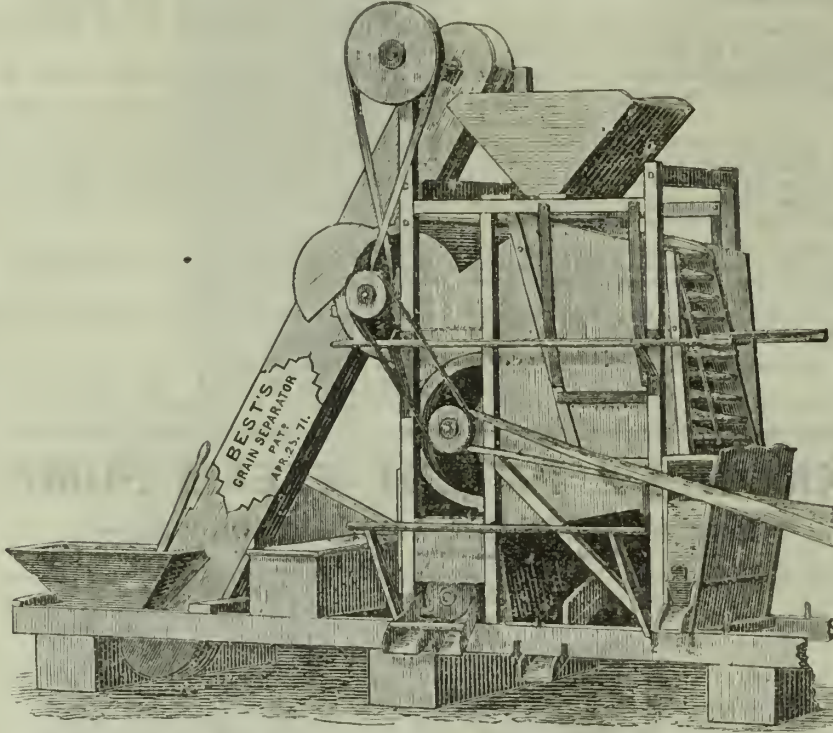
No. 338 Montgomery st., S. E. cor. California st., diagonally across from Wells, Fargo & Co., S. F.

Best & Brown's Unrivalled Seed Separator.

PATENTED APRIL 25, 1871.

We wish to call the attention of Farmers, Millers and Threshers to the great usefulness of this Machine.

We have sold in the last forty days about \$24,000 of Grain Separators and County Rights. The following counties have already been disposed of, viz: Colusa, Sutter, Yuba, Butte, Yolo, Jan Joaquin, Solano, Stanislaus, Alameda, Sonoma, Santa Clara, Santa Cruz and Monterey. These machines have been sold to parties who have seen them in operation and know that they will do all that is claimed for them.



It makes a perfect separation of Barley, Oats, Chess, Pink Seed, Kale and Mustard Seeds, and other impurities, from Wheat, rendering the finest grain (either Wheat, Oats or Barley) perfectly clean and fit for seed at one operation—common hand hulls are nowhere.

We Guaranty Every Machine to do Perfect Work

At the rate of Thirty to Sixty Tons a day. They can be conveniently attached to and run in combination with any threshing machine, and driven by the same power.

We wish it distinctly understood (and we mean all we say) that we clean grain that is too foul for the flouring mill separators, at one operation. Light Horse Powers, adapted to driving the Separator, furnished to order.

State and County Rights for sale on reasonable terms.

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Dark Brahmas,

LIGHT

Brahmas,

BUFF COCHIN,

PARTRIDGE

COCHIN

AND

Houdans,



Guaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal. Address 1v3-3in **W. FORD THOMAS,** Custom House, SAN FRANCISCO.

THE CELEBRATED

"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins. Sweeney, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors, Stockton, Cal.



CORNER GEARY AND STOCKTON STREETS, S. F.

Young and Middle-aged Men and Boys may enter on any week day, and in addition to all the advantages to be enjoyed at any other Business College, have access to the General Lectures and Literary Exercises of the University. Our Diploma is received as conclusive evidence of proficiency by the Bankers, Merchants and business men.



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FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums
At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
DARK BRAHMAS, Imported from England and Ireland;
HOUDANS, direct from France;
LA FLECHE, direct from France;
SILVER SPANGLED HAMBOURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
WHITE COCHINS,
BUFF COCHINS,
DUCK WINGED BANTAMS,
GOLDEN SEABRIGHT BANTAMS,
JAPANESE BANTAMS,
HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Pouters, Magpies, Ruffle-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

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China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

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Stock Breeding Association.

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SHORT-HORNED CATTLE

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Grass and Clover Seeds.

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Trees, Plants, Roots, Etc..

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GEO. F. SILVESTER,

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Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,
In quantities to suit purchasers.

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OAKLAND POULTRY YARDS.

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

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ALL GRADES.

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Sections from \$1.75 to \$2.50 per dozen.

Knives \$1.25 per running foot.

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BIG BEETS!

Three Thousand Pounds GIANT RED MANGEL WITZEL BEET, Imported Seed, pure and Genuine, producing specimens over a hundred weight each. Also, a few tons of that CHOICE ALFALFA left. RAMIE Plants and Seed. CALIFORNIA TREE SEEDS, some new and rare sorts. AUSTRALIAN BLUE GUM Tree Seed. FINE GRASS SEEDS for Lawns. CHOICE CANNARY SEED. Seeds of all kinds, rare Plants and Bulbs, Fruit Trees, etc., at the OLD STAND.

E. E. MOORE,

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New Catalogue of Flowers, Bulbs and Plants now ready.

WIRE,

All Kinds and Sizes,

For Fencing, Bailing Hay, Etc.

For Sale by—

A. S. HALLIDIE,

519 Front Street, San Francisco.

11v3-3m-16p

PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, APRIL 13, 1872.

[Number 15.]

Berkshire Swine.

One of the finest of the original breeds of European swine, as far back as we have any record of attempts to improve the same, was undoubtedly the Neapolitan. This, one of the most celebrated of the Italian breeds, was a cross of the Improved ancient Roman stock with the little fat China hog. Though not very hardy, the flesh is of superior quality. It is small, black, with few bristles, short snout, erect ears and small bones. This was crossed with the original English Berkshire, a much larger animal but wanting in the finer points found in the Neapolitan. The progeny of this cross with a constantly improving culture has resulted in the improved Berkshires of which the illustration presents a type perfectly true to nature. In the present Berkshire, we have less of that superfluity of fat common to the Chinese, more hardy than the Italian breed, and having less fat in the meat it is well suited for bacon and hams.

The original Berkshire has for a long time been a favorite in New England; but the more recent cross with the Chinese and Neapolitan has produced a more profitable animal, as the weight is heavier, with lighter feeding, and the disposition milder. The animals here illustrated were imported by, and are the property— together with their progeny—of the Glen Flora Stock Breeding Association, of Waukegan, Illinois, C. C. & R. H. Parks, proprietors. To double the value of the common swine of California, breeders should avail themselves of the opportunity of introducing this superior stock. We have too many of the old first breed of hogs still lingering in the herds of our large breeders, and the introduction of better blood would add vastly to the annual profits of the pork grower.

Melons in Grain Fields.

In Northern Italy they have a way of raising immense quantities of melons in their grain fields by reserving a bed of 4 feet in width for every 16 feet which they plant with melons in row or drill about the first of May; all the intervening ground between these 4 feet in width, melon beds, is sown with wheat the preceding autumn, and before the melon vines reach the borders of the same, the wheat is harvested by cutting close to the ground. The melon vines are now allowed to extend till the whole surface of the stubble land is covered. It is thought to be an economical application of labor and use of land.

We have seen nearly the same plan adopted in almost sterile lands, by planting the melons in hills in which the ground in them alone was made rich by a liberal application of manures. No culture of the land is required except immediately around the hills.

Massachusetts Horticultural Society.

We have received from E. W. Buswell, of Boston, Cor. Secretary, the Transactions of the Massachusetts Horticultural Society, for the year 1871, from which we make a few extracts. At an interesting discussion on the strawberry, held on the 21st of June, the second day of the strawberry show, the principal practical point developed was the advantage of mowing down the leaves after the crop is gathered. This operation appears to be analogous in principle to heading down a tree. The plant having finished the work of the season, and being about to commence a new one, a salutary stimulus is given to it by removing the old and useless,

as a red currant. Those for white were given to Dana's Transparent and White Dutch; the former being first. Among the collections shown were several new varieties, but none superior or even equal to the well-known kinds.

Cranberries.

Mr. N. N. Dyer, of Abington, contributed two varieties of cultivated cranberries, representing a crop of three hundred and twenty-five bushels from two and a half acres of ground. The specimens were very large and finely colored, showing plainly the advantages to be gained with this crop, by a thorough system of culture, in the increased size and beauty of the berries.

Onions.

James Carter & Co., of London, through

Deterioration of Soils.

In many of our eastern agricultural exchanges, we find repeated dissertations on the deterioration of soils produced by what they term, a shallow system of cultivation; and the arguments of many seem based upon the single supposition, that shallow plowing and constant cropping have alone produced the impoverishment.

There can be no greater mistake than this. If shallow plowing has the effect to lessen the annual yield from a field devoted to any particular crop, which we will not dispute, it might be inferred that we believe that had the field been plowed deeply, there would not have occurred the same deterioration. We believe no such thing; because experience has shown that though deep plowing serves almost invariably to increase the product per acre over the shallow plowed land, it is equally at the expense of the fertility of the soil so treated. The only difference is, the one, by a half crop and shallow plowing is exhausted to half the depth that the other field is, by a system of deeper tillage; and hence, without some renovating process besides simply deep plowing, though larger crops may be procured for the time being, it is at the expense of a deeper exhaustion of the soil.

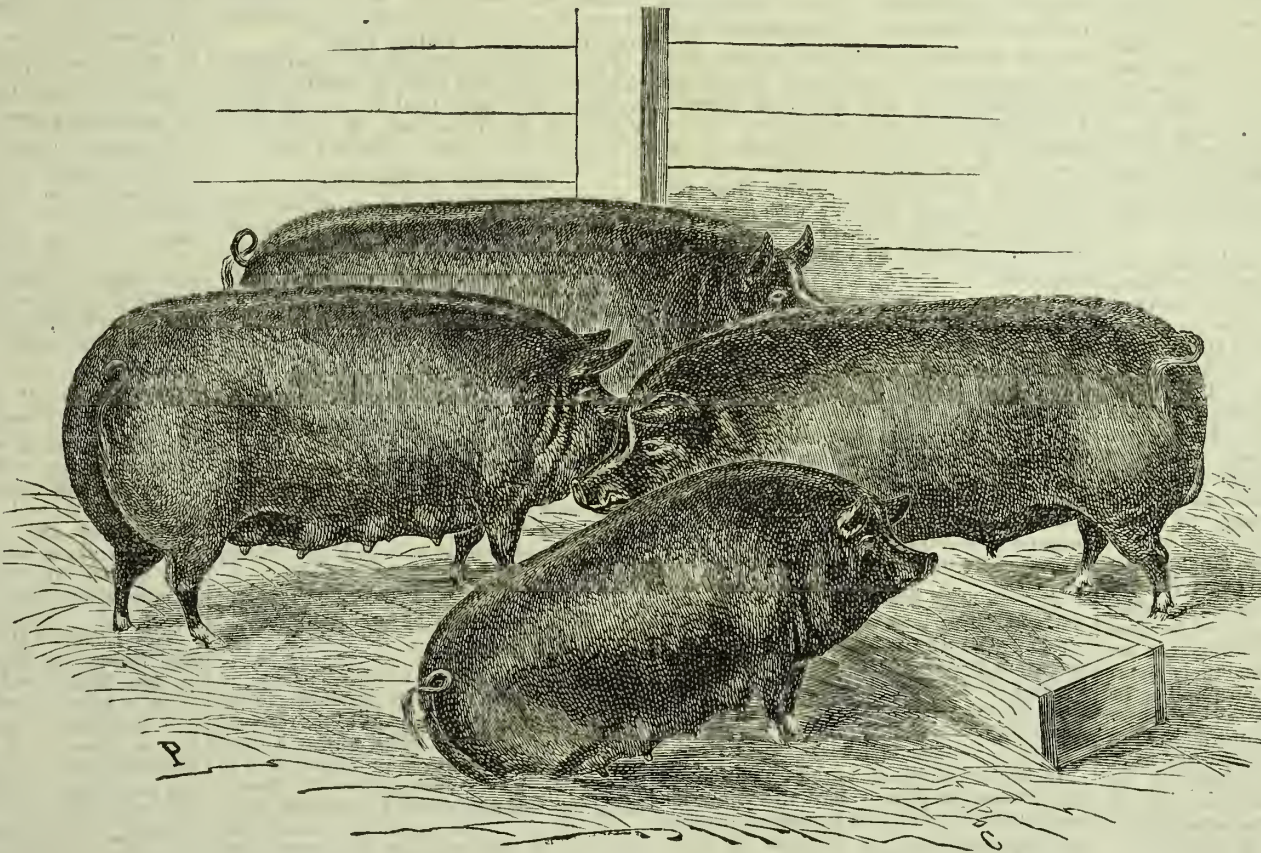
It is useless then to urge the favorite theory of many, that shallow plowing and constant cropping has alone produced the sterility too often met with in the more eastern States of the Union. It is an injudicious cultivation with no return of organic substances to the soil, that

has been the principal cause of the present barrenness. No soil, however deeply plowed, can forever maintain its pristine fertility under constant cropping, without a return in some measure of the elements that the crops produced extracts therefrom.

Upon this important point in good husbandry, too little attention is paid. Shallow plowing and constant cropping without manuring, has very aptly been termed the "skinning process;" but deep plowing under like circumstances takes not only the "skin" but the very tallow from the soil.

California has a virgin soil of great fertility, and yet not so fertile that it may not be speedily exhausted by injudicious cropping. There are causes here, too, that are operating to produce more speedily than at the east an impoverishment of our cultivated lands; one is the high value of all green crops of grasses and clovers for the purpose of feeding, either green or made into hay, and little or no attention paid to a return of manure in any form, to make good the loss.

Russia has recently organized fifteen thousand public schools.



IMPORTED BERKSHIRES, SKETCHED FROM LIFE.

and perhaps fungus-eaten foliage. We may add, that one of the most successful growers of strawberries in this State says, that, in his opinion, the practice of mowing off the vines after taking off a crop of fruit is the most important advance in strawberry culture that has been made for twenty-five years. He further says, that no one can afford to raise strawberries, on the old system, when the new method becomes established.

Cherries.

The season for this fruit, which, it was feared was going the way of the plum, has been decidedly better than any since 1860; the injury to the trees, from which they are now recovering, having been experienced in 1861. Owing to the ill-success of this fruit for the last ten years, comparatively little interest has been felt in it, and consequently many of the specimens shown were unknown varieties or seedlings. The first two prizes for the best single dish were awarded to that old favorite, the Black Eagle; and the first prize for the best collection to Napoleon Bigarreau, Black Eagle, Black Tartarian, and Elton.

Currants.

The Versailles has again taken all the prizes

their agents here, Messrs. Washburn & Co., exhibited a collection of four varieties of new Giant Italian Onions; viz.: Giant Rocca of Naples, Large Italian Red Tripoli, Early White Naples, and Giant White Tripoli. The specimens of each variety were very fine, and of unusual size, all the bulbs weighing upwards of two pounds each; the largest turned the scale at two pounds, eleven ounces. The Rocca is a fine variety, of delicate flavor, large globular shape, and light-brown skin. The Early White Naples is a distinct variety, of quick growth and mild flavor; originally selected from the Italian Tripoli Onion for its distinctive qualities of size, earliness, and beautiful silver-skin. The Large Italian Red Tripoli and Giant White are also distinct varieties, of exceedingly mild and fine flavor. Special certificates were awarded to each of these varieties by the Royal Horticultural Society, London, in 1869 and 1870, where a single bulb of the Giant Rocca was shown, weighing three pounds, nine ounces.

SHEEP, never before accustomed to any extraordinary jumping, have recently gone up 25 per cent.—simply on account of the value of the wool on their backs.

CORRESPONDENCE.

Tulare County Review.

EDITORS PRESS:—I must send a line from this part of our glorious country; for it is indeed glorious here, with beautiful wild flowers all over the plains to the west of us, green robed mountains with snowy caps to the east, streams belted with oaks to the north and south. Here is the crop of barley where only twenty-five pounds of seeds were drilled in each acre; it is about 2½ feet high; plenty thick enough; no danger of falling down; some heads coming out. It is on last year's stubble. No doubt it would have been better had the land been plowed. Do I hear some reader suggest that being on stubble land the volunteer should be added to the 25 pounds? My friend, stock were too hungry last year to leave much, and of the volunteer you can see only a bunch here and there. Here is a half acre sown broadcast and harrowed in Jan. 16th on plowed land, only 10½ pounds to the half acre; now the ground is covered a foot deep with the green.

Corn is four inches high; snap beans have started vine; early pears nearly done; late ones making pods. Cabbages growing fine—thanks to Wilcox's Steam Water Lifter, which supplies them with water at a temperature of 80° to 90° whenever rain fails for two weeks. We have had no rain of any account this month until the 29th, when 45-100 fell; the total for the month being 66-100. The average temperature 48° at 6½ A. M. Minimum 39° on the 17th, when we had a very light frost that only touched a few of the tomatoes; average at 2 P. M. 66°. Maximum 74° on the 23d. Pink eye potatoes making blossom buds, tubers 1 to 1½ inches in diameter. Gum trees are now the rage; everybody wants one or has a few seeds planted, so if our teeth are all gone we hope to have gum enough left.

P. W. (I wish writers would sign their full names) in No. 9, writing about early tomatoes, wants to hear from me. Tell him he may hold that \$100 ready for my pocket next spring, if not sooner, for the railroad will soon be here, when we hope to be able to show him this part of Tulare Co., as the place. It was my brother William who resided at Patah Creek. I often see articles in the Press to answer or think of remarks to make, when time or labor will not permit. I will try to make notes more and suggest to other farmers to do the same.

Do readers all think how much better it is to support a first-class paper like the Press, which only costs 8 cts. per number, coming weekly, than to pay \$1.50 per year or 12½ per number for monthlies that are no better, if as good. Farmers compare all papers with their price per number instead of thinking of \$1.50 as against \$4. How much more practical information for a California farmer is contained in a number of the Press than in the *American Agriculturist*, though it is well to have both, and they will pay if you read and practice with judgment. ISAAC B. RUMFORD.

Plano, Tulare Co., Mar. 31, 1872.

Transplanting Large or Small Trees.

EDITORS RURAL PRESS: I notice an article in the Press of the 9th of March, on the "Culture of Almond," by "W. W. Brier," which I think is open to criticism in several particulars, but especially I object to the doctrine that almond trees "are best when put out in the dormant bud." I agree with this writer that "large trees are stunted by transplanting." But I do not consider peach and almond, apricot and plum trees at one year from the bud, as being large in this sense. The almost universal opinion and practice of well informed fruit growers and nurserymen now, is, that apricot, peach, almond, and perhaps plum, should have one year's growth from the bud before transplanting into the orchard. Apple, pear, and cherry, ought to stand in the nursery two years after being budded. It is cheerfully admitted that trees may be transplanted from the nursery in dormant bud, but experience and observation have convinced me that the practice is not to be recommended. As it has now become the practice with most of our nurserymen to

bud all kinds of fruit, it becomes an important question with all who contemplate planting orchards, at what age should trees be taken from the nursery. There is room for difference of opinion, and I should like to see the subject further discussed, by practical men, in the columns of your excellent and widely read journal.

NURSERYMAN.

Solano County Review.

EDITORS PRESS:—In your notes from the different counties of the State I see that this part of Solano is left "out in the cold," therefore I thought that I would give you a few items.

The Weather.

During the months of January and February the croakers cried too much rain, but for the last month not having had more than a few drops, and a considerable north wind, the complaints have changed to the other side. However, the grain crops are not yet suffering, and with a few more light showers the crops will be larger than usual.

The breadth of land sown to wheat is about one-fourth more than usual, and with an average crop (and we expect more than an average) there will be fifty thousand tons delivered at Vaca, Batavia and Dixon stations, or about an average of fifteen thousand at each place, provided Main Landing does not draw more than her proportion to that shipping point.

Tree Culture.

There is also more attention paid to setting out ornamental, forest, shade and fruit trees than usual. Many farmers having set out from one to five acres. The Australian gum, I think, will prove the best ornamental tree for this section. Fourteen years ago when this part of the country first began to be settled, it was thought that nothing could grow without irrigation except small grain. Now the country is dotted all over with fine vineyards, orchards and flower gardens. The latter only have to be watered during the summer.

Vineyards.

There is about one hundred and fifty acres of vines from five to eight years of age within two miles of this place. The mission grape was first planted, but nearly all have been grafted with foreign varieties. San Francisco has been our market for grapes in past years, but I think that the producers will put up a press at this place this summer, and ship the juice and sell to distillers. They feel that the commission merchants have always gotten the largest share of the profits.

Vegetables.

About the earliest vegetables of the season in the San Francisco market are shipped from this section, but are raised in Patah Cañon, about ten miles from here. Here we only raise spring vegetables for home use.

Grain Shipments.

In 1870 we shipped six thousand tons of grain from this place. Last year the crops were considered almost a total failure, but one thousand tons was stored in the warehouse here, and about two hundred tons were shipped from the bank.

The farmers are now busy preparing for haying and harvest. Seven headers were sold by Baker & Hamilton yesterday to parties from this vicinity; two threshing machines and several mowers.

Last, but not least, the PACIFIC RURAL PRESS is growing in favor with the farmers, and with a prosperous year you may look for an increased subscription list. Not wishing to take too much of your valuable space, I subscribe myself

Yours truly, OCCASIONAL.

Batavia, Solano Co., April 3, 1872.

Napa Valley.

A correspondent, C. M. of the *Bulletin* gives the following favorable showing of the agricultural situation in Napa Valley.

The plentiful rains of last winter, have washed, refreshed and renewed everything in hill and dale, valley and mountain. Deep green and light green, primrose yellow, and orange yellow, with light blue lilies, cover the fields everywhere. The fresh spring breezes go scurrying through the young grass and grain, bringing down the blades and revealing their verdant sheen; while the daisies and buttercups give the landscape the appearance of hav-

ing been dusted with light or deep-yellow covered sulphur.

Price of Land in Napa Valley.

The best level land in Napa Valley, distant one to one and a half miles from the railroad and towns along its line, fenced always, and in some cases having good houses and orchards attached, is now worth an average of \$100 per acre. If it is very close to the town it is worth \$150 per acre. Several fine fenced tracts, distant two or three miles from the railroad, can be bought for \$50 per acre. These are much lower rates than those which prevail south of San Francisco on either side of the bay.

Grape-Growing and its Profits.

Land suitable for vineyards is worth \$25 to \$50 an acre, according to location—the average being about \$35. The further up the sides of the low mountains bounding the valley the buyer goes, the cheaper he can buy vineyard land, some being now for sale in such locations at \$10 per acre. Nothing pays so well in Napa Valley as simple grape raising; not for direct wine-making purposes, but for sale to those who are engaged in the latter business. The wine-makers last year paid a cent a pound for Mission grapes, supplied the boxes in which the grapes were packed, and laid them down empty for and received them packed from the grape-grower at whatever railroad station was most contiguous to the vineyards. The six to eight-year-old vines, yield five to six tons of grapes to the acre, which, even at the price named, pay the farmer a profit of \$100 to \$120 per acre, per annum, gross, or \$60 to \$80 net. One farm last year netted \$60 an acre from vines which were only three years old.

One man with two horses, plow and cultivator, can easily take care of a 40-acre vineyard, requiring no help except at cutting, pruning and vintage time.

I do not derive these items from unreliable hearsay, but from a twenty year's resident, and large-land owner of Napa Valley—T. H. Thompson, of the firm of Sterling & Thompson, of Napa City.

Real Estate in Napa City.

Lots on the best portion of the best business street of Napa City, are worth \$100 to \$125 per front foot. One salo of a corner, was lately made for \$12,000. The lot was 60 feet in front and 120 feet in depth, and was nearly covered with cheap frame improvements, which rents in all for \$140 per month. A new, very handsome and substantial bank is going up, on the corner portion of this lot. Building lots, with a frontage of fifty feet, are worth only \$350 to \$600 each in Napa.

Those who wish to enjoy the spring beauty of California rural scenery, and learn facts relating to the profits of California agriculture, can probably accomplish both objects as well in Napa Valley as in any part of the State.

Wonderful Railway Bridge.

The Wallkill Valley Railroad bridge at Rosendale, Ulster county, deserves to be placed among the wonders of railroad construction. It is built across a deep gorge in the Shawangunk Mountains, in which lies the romantic village of Rosendale, and through which sweeps the Rondout creek. The immense chasm lay directly in the route of the surveyors, when the line was run, and there was no possible way to get around it, and the gigantic task of bridging it was commenced. The Western Manufacturing Company, of Paterson, was awarded the contract for the superstructure, and A. L. Dolby & Co. the excavation and abutments. Work was commenced on the abutments in the fall of 1870, but owing to the prevalence of quicksand in the excavation, it was a year before everything was in readiness for the superstructure. It was completed in January last, nearly a hundred men having been steadily employed on it during that time. The bridge is a diagonal truss, Post's patent. There are three iron spans and two wooden ones. The entire length of the bridge is 987 feet, the iron spans being 876 feet, and each of the wooden ones 56. It is 150 feet above the Rondout creek. In putting up the iron work 300,000 feet of timber were used, it being necessary to put it up for each span at a time. One thousand tons of iron were used in the construction, and its supporting capacity is 4,000 pounds to the lineal foot. For the stringers, cross-pieces, etc., 120,000 pieces of timber were required. The structure is the highest span bridge in the United States. It cost \$125,000. The rails will be laid over it next month. —N. Y. Times.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

MACHINE FOR PAINTING WIRE CLOTH.—Samuel Graves, S. F. The object of this invention is to provide a machine by which fibrous substances, and wire cloth especially, can be rapidly and thoroughly painted. It consists in passing the long strips of cloth from a reel, through a bath of paint where it is thoroughly coated, and thence between one or more sets of elastic rollers which squeeze out all superfluous paint from the meshes, but leave the wire thoroughly coated.

PERMUTATION LOCK.—Wm. C. Bussey, S. F., Cal. The object of this invention is to provide an improvement in that class of locks which are commonly employed for safes and bank-vaults. It is called a detached cylinder lock, and consists mainly in the employment of operating devices which render it possible to remove the lock to a considerable distance from the knob, and also in the use of novel devices between the knob and the lock proper by which the combination is set and operated. An elastic connection is employed so that it will be impossible to tamper with the lock from the outside.

BRICK KILN.—Francis F. Boudrye, S. F., Cal. The object of this invention is to provide such an arrangement of the lines of bricks and the conducting passages for heat, that all parts of the kiln shall be exposed uniformly to the heat and thereby the burning and spoiling of many brick in every kiln is avoided.

IMPROVEMENT IN TRACTION ENGINES.—W. W. Hanscom, San Francisco, Cal. This invention relates mainly to improvements in applying power to the wheels of traction engines so that all gearing and complicated machinery are dispensed with. It consists in the employment of hydraulic pumps which are operated by means of steam cylinders. The hydraulic cylinders which are operated by the pumps are connected directly with cranks, which are fixed upon the axles or wheel centers, and in such positions as to have no dead point. The whole mechanism is much simplified.

SUBMARINE, AND OTHER WALLS.—Wm. H. Foye, San Francisco, Cal. This invention relates mainly to an improved method of constructing walls, by which a system of ground and vertical rods are employed which guide and assist in placing the stones, and also serve to retain them firmly in place after they are there. It also relates to a device for attaching a cornice when employed upon buildings.

THE LONGEST BRIDGE IN THE WORLD.—The Tensas and Mobile bridge, or bridges, on the Mobile and Montgomery railroad, extends from Tensas station on the Mobile and Montgomery road, to the city of Mobile, a distance of fifteen miles, crossing both Mobile and Tensas rivers and including ten draws, one for each of the navigable channels into which the rivers are divided. The bridge itself is constructed of wood, but its piers or supports are iron cylinders, which rest on a solid surface of wooden piles driven down evenly with the bottom of the stream and the mud of the intervening morasses. It has been three years in course of construction, at a cost of about \$1,500,000, and now that it has been successfully completed, it is perhaps the longest structure on the globe.

TRADE.—According to the most carefully prepared statistics the total value of the trade between the United States and Europe, for 1870, was \$400,000,000, exclusive of bullion or specie, the imports of which from this country into England exceed \$50,000,000 more. During 1871 England took from us products valued at \$250,000,000, and exported in manufactures to the United States to the value of \$156,000,000. The latter figures represent the products of Great Britain, Ireland and her numerous colonial possessions, the last mentioned, however, being less than \$15,000,000 of the aggregate of merchandise shipped by us to Great Britain.

A PERFUME for note paper, said to be that used by the Queen of England, is made of powdered starch, one half ounce; otto of roses, ten drops. Put this in bags and keep in the desk with paper.

MECHANICAL PROGRESS.

Petroleum as Fuel in Iron Manufacture.

Much attention has been drawn to experiments with petroleum in iron-making for some months past in progress in the La Clede Mills, St. Louis. No reliable data are afforded concerning the smelting of ores, but the results in converting pig into bar and malleable iron are said to be good. We quote the *Pittsburgh Commercial*:

One of the tests—all of which are said to have been of the most thorough character—employed to ascertain the effect of petroleum heat, consisted in puddling 1,000 pounds of pig-iron, smelted with raw Illinois coal in 1859, and which, owing to the large debasement by sulphur, had been thrown aside as worthless. Frequent efforts have been made from time to time to reduce the mixture to merchantable iron, but to no avail. Since 1864 it had lain neglected. A single hour's treatment with liquid gas, however, is said to have turned the mass out in the shape of iron of the finest quality, closely resembling steel, and perfectly free from sulphur and all other impurities. Specimens were exhibited, and were pronounced by old iron men as of the very finest quality of metal, equal if not superior to the best charcoal iron.

Other experiments are said to have demonstrated that common Iron Mountain pig-iron could, by a single application of the liquid fuel in the puddling furnaces, be made into the best flange boiler iron, which, under the severest tests, was shown to be equal to the first quality Sligo or Low Moor iron, a range of capacity which is reported to have astonished even the most sanguine believers in the patent.

It is asserted that the iron manufactured by using this fuel has been tested in almost every conceivable manner, and that these tests prove its tensile strength as well as its capacity to sustain weight to be far above the average; in the former showing a tensile strength of more than 1,000 pounds greater than specimens of Low Moor iron. The workmen in the mill are said to be greatly interested in the experiments. They recently satisfied their curiosity by rolling this iron in sheets, and though still experimenting, have produced sheets so thin that five hundred of them are but one inch thick. These sheets are described as being remarkably tough and flexible. Numerous other experiments are also reported to have been made, with only temporary machinery and apparatus for the use of petroleum fuel, but with the most satisfactory results.

From these experiments it would appear to be considerably cheaper than coal in its use and handling, so far as the heating of the iron for the rolls is concerned, while the saving in 'scrapping' gives it a still further economic advantage, as the following results obtained in the scrapping furnace show:—

Iron placed in the furnace.....	7,950 lbs.
Iron taken out.....	7,761 lbs.
Showing a loss of.....	189 lbs.
Loss with coal 15 per cent. on.....	1,192 lbs.
Deduct loss with liquid fuel.....	189 lbs.
Saving with liquid fuel.....	993 lbs.

"Although petroleum is generally known to be a concentration or distillation of coal, and that in proportion to the crndity of the coal to the concentrated character of the petroleum is the intensity of the heat produced by the petroleum greater than the heat of the coal, yet this seems to be the first definite and sustained attempt to apply the greater intensity to practical uses, and to employ it as a refined mechanical force.

Heretofore, coal has been the main aliment of industry, and such is its importance and value throughout the civilized world, that any material which supersedes it in cheapness and importance in the more essential uses of industry and commerce, must necessarily be an agency of incalculable value, and work a corresponding revolution in the development of the resources of the country and their adaptation to the requirements of civilization and the interests of man. As to the supply of the new fuel, so as to render its use a question for economy, there need be no alarm, for the quantity of it in many parts of the world seems to be inexhaustible and easy of access, and especially is this the case in our own country. Should the claims which are made in its behalf be substantiated by further experiments and investigations, it will probably work an eventful revolution, not only in the manufacture of iron, but wherever heat, steam, or artificial light are employed.

LABOR-SAVING MACHINES.—The beneficial effect of labor-saving machines in improving the condition of workmen, it is stated, has been exemplified by the application of the sewing machine to the manufacture of shoes. The workmen of Lynn, Mass., who in 1862 were earning ten dollars a week without the assistance of the leather sewing machine, are now, it is reported, earning fifty dollars a week with the aid of this useful apparatus. The inventor, who in 1862 was threatened with mob violence, is now considered by the workmen as their greatest benefactor. Within the last ten years the town of Lynn has doubled in population and taxable property, and it is estimated that forty-four millions dollars have been saved to the whole country by the invention of the sewing machine as applied to the manufacture of articles of leather.—*Public Ledger*.

High-Speed Engines.

F. A. P. Barnard, President of the American Institute has recently made an elaborate investigation of a high-speed Allen engine, the results of which we find given in the *New York Engineering and Mining Journal* as follows:

High velocities and considerable weight in the reciprocating parts of cylinder steam engines, working expansively, are advantageous in the following particulars:

First, in distributing the work done with a near approach to uniformity over the circumference described by the crank in its revolution; and secondly, in greatly reducing the irregularities of strain experienced by the working parts of the engine, especially as it respects the torsion of the shaft.

The advantage derivable from the use of heavy pistons increases with increase of weight only up to a certain point and is dependent on the initial pressure of the steam in the cylinder, on the point of the stroke at which cut-off is made, and on the velocity of revolution.

A high speed, heavy piston engine, depends, like every other reciprocating engine, upon the inertia of its fly-wheel or other rotating parts for the facility with which it passes the centers, but it taxes these regulators less than the ordinary reciprocating engine, because of the brevity of the intervals during which the effective force intermits. There must be at the beginning of the stroke a large excess of steam pressure above that which is required to overcome the inertia of the piston, and impart to it the necessary acceleration; otherwise the advantages derivable from this construction and mode of working will not be fully secured, and the irregularity of working of the engine may even be exaggerated.

The counterpoise weight employed to balance the strain exerted toward the close of the stroke by the heavy piston upon the crank, ought not to exceed one half the weight of the reciprocating mass to which it is opposed; otherwise, immediately after the passage of the centers, the strain on the main shaft in the direction opposite the crank will be excessive, and may be injurious.

IMPROVED CANAL BOAT.—The first iron canal boat made in this country, or in the world, is now being built at the Continental Works, Green Point, N. Y. The boat is constructed on what is known as the longitudinal and transverse plan, with water-bottom divided by the framing into water-tight compartments. She has three entire bulkheads, dividing the machinery, cargo, and cabin spaces from each other. The boat is especially designed to carry grain, and has a cargo capacity of 200 tons of wheat. It is being built for the Fowler Improved Steam Propeller Co., and is especially designed for the improved screw of this company, the peculiar advantages of which for canal navigation, and the lightness and strength of this boat, it is expected will settle the vexed problem of how to carry a paying freight at a fair rate of speed upon canals. It is thought that time now required for through freights will be reduced to one-third or one-fourth of that now taken.—*Coal and Iron Record*.

IRON AND STEEL RAILS.—As compared with iron the breaking tests which steel rails will stand are something wonderful; 1,000 pounds falling 10½ ft. has long been applied as a breaking test for first-class iron rails, while steel rails stand a test of 2,000 pounds falling 13½ feet.

The object sought in railway construction is a rail which will be hard enough to stand abrasion and wear, but strong enough to stand all the strains to which it is liable. The railroad engineer's idea of hardness is that quality which imparts durability without brittleness.

FREEZING BY MECHANICAL ACTION.—M. Fosselli has announced to the French Academy of Science that he has succeeded in producing an amount of cold just below the zero of the Fahrenheit scale, by simple mechanical action creating rapid evaporation. He employs a wheel formed of a spiral tube, both ends of which are open, set vertically and half immersed in the fluid to be cooled, so that the latter passes constantly through the whole length of the tube, half of which is constantly above the liquid, and, being wet, gives rise to active evaporation and consequent refrigeration within it.

THE LARGEST IRON CASTING ever attempted has been successfully achieved at the Elswick Ordnance Works, Newcastle-on-Tyne, under the direction of Sir William Armstrong and Captain Noble. It was a huge anvil block, weighing 125 tons, to be used with a twenty-ton double action forge hammer, for performing the necessary forging for the 35-ton Armstrong gun.

IRON AND STEEL DUST.—A Boston mechanic recommends the placing of electro magnets in shops where iron and steel dust prevails, to take up the particles and prevent them from pervading the atmosphere and injuring the health. The experiment would undoubtedly prove effectual.

A MACHINE has been invented in Chicago for making type by a cold pressure process out of copper. It is said that copper type made by this process lasts ten times as long as cast type.

FOUR iron ships of the capacity of 2,000 tons each are now building at Buffalo, to run in the Buffalo and Chicago trade.

SCIENTIFIC PROGRESS.

New Triumphs of the Chemical Laboratory.

Reports from abroad chronicle another great step forward in the art of compounding certain chemical products, thus far only obtained by the intervention of vegetation, out of their inorganic elements. The discoverer is Professor Schulze, who recently at the session of the chemical section of the German Association for the Advancement of Science, at Rostock, communicated his discovery of a method of making a series of hydro-carbon compounds, as benzole, nitro-benzole, or oil of myrbane, anilin, and anilin colors, from their inorganic elements.

We have before us a memorandum of the process employed, which is too lengthy for the columns of the Press.

The learned Professor also makes millitic acid, from any form of carbon, such as mineral coal or charcoal, also from graphite or plum-bago. When this acid was first produced the Professor called it anthraconic acid; but he soon found that it resembled mellitic acid very closely, and finally that it was identical with the same. This being the case, the road was open to make successfully from inorganic substances, such as carbon, permanganate of potash, soda, nitric acid, iron-filings and chloride of lime, the series of mellitic acid, benzole, oil of myrbane, anilin and the anilin colors. As in a similar way the isatine, one of the coloring matters in the indigo, and the garancine, one of the coloring principles in the madder, have been made, the road is open to produce all these dye-stuffs, and probably several others, from the elements, without having recourse to vegetable growth.

If, however, the growing of the plants producing these dye-stuffs, will, for the present, be not more economical than compounding them out of their elements in the chemical laboratory, is a totally different question, which practical experience will decide. A great triumph, in the meantime, is the fact that the possibility to do this has been proved. Very likely, in the progress of these investigations, we may find the means to compound from their inorganic elements all the products now derived from the destructive metamorphosis of organic growth; and as oxalic acid, vinegar and alcohol have already been thus obtained, so we may some day produce grape sugar, dextrine, etc. However, it is very unlikely that we will be able to compound the smallest starch granule, as this possesses a highly-elaborate, organized structure, which is easily ascertained by the polarizing microscope. By the destruction of the starch granules, we obtain successively dextrine, gum, sugar, alcohol, vinegar, and ultimately carbonic acid and water.

MECHANICAL EFFECT OF MAGNETIZATION.—The following is from a lecture by Prof. Tyndall: "The effect I wish to make manifest was discovered by Mr. Jomle, and was subsequently examined by MM. De la Rive, Wertheim, Marian, Mattencci, and Wartmann. It is this:—At the moment when the current passes through the coil surrounding the electro-magnet, a clink is heard emanating from the body of the iron, and at the moment the current ceases a clink is also heard. In fact, the acts of magnetization and demagnetization so stir the particles of the magnetized body that they, in their turn, can stir the air and send sonorous impulses to our auditory nerves. The sounds occur at the moment of magnetization, and at the moment when magnetization ceases; hence, if means be devised of making and breaking, in quick succession, the circuit through which the current flows, we shall obtain an equally quick succession of sounds. I do this by means of a contact breaker which belongs to a Ruhmkorff's induction coil. A thin bar of iron stretches from one of the bridges of this monochord to the other. This bar is placed in a glass tube, which is surrounded by copper wire. The contact breaker is placed in a distant room, so that you cannot hear its noise. The current is now active, and every individual in this large assembly hears something between a dry crackle and a musical sound issuing from the bar in consequence of its successive magnetization and demagnetization.

OBTAINING ABSOLUTE ALCOHOL.—A German *savan* has recently improved on the well known method, employed by Mendeleeff, for obtaining absolute alcohol. Alcohol of 792 is boiled with quicklime, the pieces of the latter projecting above the surface of the liquid, for half an hour or more, with a condenser inverted so that the liquid may return by its own gravity to the flask. The condenser is then reversed, and the alcohol redistilled. If the alcohol contains more than 5 per cent. of water, the process must be repeated two or three times. The vessel should only be half filled with the pieces of lime, as the rapid formation of hydrate of lime may break it to pieces.

ELECTRIC CURRENTS.—In the *Comptes Rendus*, for January 2d, M. P. Volpicelli has a memoir "On Electric Currents Obtained by the Bending of Metals." From this it appears that all metals, being bent or twisted, give rise to the development of an electric current, and that copper exhibits this phenomenon in the highest degree.

RECENT OBSERVATIONS OF THE PLANET VENUS.—Although this "star of love" is our nearest neighbor among the planetary bodies, we know less about her than about several of the family that are more distant. Her very brilliancy has interfered with the study of her face, blinding the observer "with excess of light," and little has been learned on the subject since the days of the indefatigable Schröter. At the beginning of the present year a committee of the "Observing Astronomical Society," in England, arranged for a series of systematic observations of the planet, and no less than thirty-seven gentlemen promised to aid in the work. They began their operations in March, and valuable results have already been attained. Markings upon the surface of the planet have been seen and delineated by several of the observers, and there is a general similarity in the drawings made at the same date by different persons. When the various sketches and observations have been carefully compared we may expect that our knowledge of the "geography" of Venus will be materially enlarged.

SINKING OF BODIES IN THE OCEAN.—Doubts about the sinking of bodies in the ocean can only be entertained by those who imagine the water is more compressible than the bodies sinking in the same. Now the reverse is the case. Water at a depth of 8,000 feet is only increased one-hundredth part in its density or specific weight, while cork, wood or other porous bodies, will at a much less depth become so much compressed as to be unable to even re-ascend to the surface. They have become heavier than water, and, consequently, will float no longer, and this is called water-logged. We have heard people who even went so far in their error as to assert that, at a sufficient depth, the density of the water is such as to prevent even stones from sinking further; the absurdity of this notion is evident from the fact that in this case the whole ocean bottom would be floating.

SCIENTIFIC ACHIEVEMENTS.—What would the great father of British chemistry have said, had he stood in the lecture room of the Royal Institution, where his great discoveries were made, and seen the burning hydrogen extracted by our great countryman Graham, from a meteorite, the heat and light of another world; or could he look with Lockyer on the burning flames of hydrogen, which dart up from the sun to a height of 50,000 miles, or could he read the flashing telegrams which so rapidly run around the world, that our notions of time are completely upset, and we actually receive intelligence to-day which was sent to-morrow?—*Ex.*

THE SPECTROSCOPE AND NEBULAR HYPOTHESIS. Prof. Kirkwood says that the spectroscope has demonstrated the present existence of immense nebulons masses, such as that from which Laplace supposes the solar system to have been derived. It has shown, moreover, a progressive change in their physical structure, in accordance with the views of the same astronomer. In short, the evidence afforded by spectrum analysis in favor of the nebular hypothesis is cumulative and of itself sufficient to give this celebrated theory a high degree of probability.

POWER OF THE SUN'S RAYS.—Mr. Siemens, the well known English telegraphist, has invented a photometer which has proved that light penetrates to a depth of one hundred fathoms below the surface of the sea. Hitherto it has been supposed that thirty fathoms was the farthest depth to which the sun's rays could reach, but an apparatus, of which the main feature is chemically prepared paper, has proved that the sun is more than three times as powerful as was supposed.

VAPORS FROM SMELTING WORKS AND VEGETATION.—The apparently injurious effect on vegetation of the vapors from the smelting works at Freiberg, Saxony, has given rise to careful investigations and elaborate experiments with certain plants on the part of the authorities. It has been found that neither the soot or the arsenious acid of the vapors injures the vegetation, but the sulphurous acid, even in very small amounts, has a deadly effect. Moreover, the feed raised in the vicinity causes peculiar diseases of cattle.

BUDDHU'S RAYS.—A resident of Colombo, in the island of Ceylon, writes to *Nature*, describing a curious meteorological phenomenon which occurs there, and which the inhabitants call "Buddhu's Rays." It consists of radiated bands in the sky, alternately of rose color and blue, proceeding from a point close to the horizon, and is generally noticed in the west at sunset, although it occasionally appears in the east. It commonly extends from thirty to forty degrees.

PROFESSOR SHEPARD, of Amherst College, Mass., has one of the largest collections of meteorites in the world. It embraces 146 different meteoric stones and 94 meteoric irons. The heaviest specimen of the irons is one from Aërotopas, weighing 438 pounds, and the largest of the stones is that from New Concord, weighing 52 pounds.

A MICROSCOPE LENS was recently made in London, at the cost of \$1,250, from a diamond, its magnifying power being an increase over that of glass as eight to three.

THE DAIRY.

Dairying in California.

Mr. X. A. Willard, the best writer in America upon subjects connected with dairying, recently wrote to the *Rural New Yorker* as follows:

Having traveled over the dairy districts of Great Britain, France and Switzerland; with an intimate acquaintance of the dairy lands of the Eastern and Middle States; of the Canadas and several of the Western States, we found, upon the Pacific slope, conditions different from anything seen before. The climate, the soil and the grasses are different, and, indeed, as compared with other dairy sections, so unlike that we found it often difficult to draw satisfactory conclusions.

Up to the present time, stock has been kept upon extensive ranges. The soil is wonderfully productive in cultivated crops, but whether any of our artificial grasses can be introduced to take the place of those natural to the soil; whether, indeed, the bunch grass, under close cropping and long continued dairying, will prove enduring, are questions not satisfactorily solved.

While the climate of the Coast Range is low and uniform in temperature, some of the valleys further in the interior are intensely hot in summer. In the Sacramento Valley the heat is sweltering, and, of course, dairying in such portions of the State could not profitably be carried on. The absence of meadows and the sowing of oats or barley for hay is a feature that at first would not strike an eastern dairyman favorably. Yet when it is taken into account that stock run out all winter in the fields, and comparatively little fodder is required, meadows, it would seem, are of little account and can well be dispensed with. Looking over the country, as we did, at its worst season, when everything is dry and parched, one would not be likely to be misled with impressions too favorable. And yet, from what we saw and heard, we were favorably impressed with California dairy lands. We found stock universally in fine, thrifty condition.

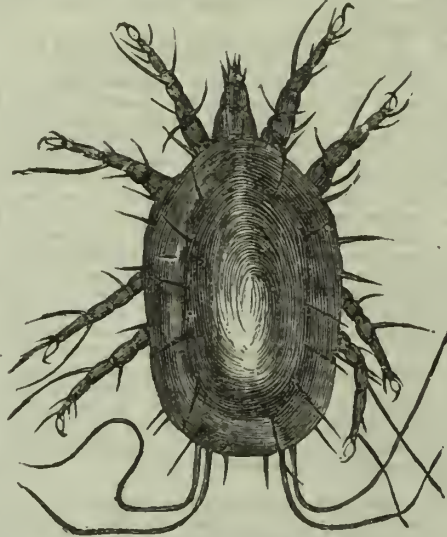
It was plainly evident that much less labor was required in the care and feeding of stock here than at the East; that under ordinary management there must be much less percentage of loss in stock from disease and accident, on account of more favorable climate; that fancy goods could be easily made, and that with proper skill in manufacture, poor stuff ought to be the exception rather than the rule; that with the same prices for dairy products as at the East, large profits could be realized, because dairies could be managed at less expense, to say nothing of the difference in the price of lands. These, with other advantages, could not be ignored. And in saying this, we do not wish it to be inferred that we advise Eastern people with good farms, eligibly located, and who are doing well, to pull up stakes and go to California, for we believe something in the old adage, to "let well enough alone." Still, to young men seeking homes in the West, who are active and energetic, and have skill in dairy management, California, in our opinion, offers inducements which cannot be readily found elsewhere.

MOUNTAIN DAIRIES.—The Yreka Union says: The day is not far distant when Siskiyou county will bear the same relation to California that Orange county does to New York. In the latter region, there is a small valley called Goshen, where the old Dutch burghers, half a century ago, took hold of the dairy business with such a zest as to give the Goshen butter a reputation all over the continent. Then it was a small business, but now the amount of capital employed in the dairy business in that county approximates to millions. We believe that a similar future awaits our own county. Already the Siskiyou butter has a reputation in the San Francisco market unequalled by any in the State. We attribute this mainly to the fact that our county contains a large number of snow-fed streams, in which butter, if worked entirely from butter-milk, can be kept sweet for seven or eight months after it is made. The butter is canned and hermetically sealed. Next the cans are boxed up and the boxes put away in a cellar. In this way butter made in May or June will be found sweet in December. We look forward to the time when men of ample means will engage in this business and put up commodious barns for their stock, for experience has demonstrated the fact that the better shelter stock receive the less food they require. We consider

the Devon cattle the best adapted to our county, as they are active and hardy. As milkers they do not give so much in quantity as the Ayrshires or Alderneys, but the milk is richer and better adapted to butter making. The herds of common milk cattle can be perceptibly improved in the short space of eight years by crossing them with the Devon stock.

Fruit Boxes.

Now that the fruit season is about to open, the question of cheap packages is beginning to be agitated. A box is wanted at a price sufficiently low to admit of its being sold with the fruit. The return package system has become an intolerable nuisance, expensive alike to the producer and consumer, and troublesome to the commission merchant. In the Eastern States this plan went out of use about five years ago, and all in the fruit trade heartily recommend the advantages of the new order of things. Mr. W. F. Finch, an extensive fruit grower of Pleasant Valley, Solano county, has brought out from the Eastern States a box which is now in general use there, that seems to be all that is required. These packages are made of light material, are neat and strong, as well as cheap. The lumber for them is to be prepared, all ready for putting together, at the factory, and can then be shipped in shocks at small expense. Each fruit grower nails together his own boxes, as they are required, or has it done beforehand when his men are otherwise unoccupied. The size intended for Peaches, Apricots, Plums, etc., holds 30 lbs. and is to be furnished at 8c each; a 10-lb box, for



THE SUGAR MITE.

Cherries and Grapes, can be made for 2c, and 2-lb Berry boxes at 1/2c each. The last require crates for convenience of shipping, which can be made to hold 18 of them, or 36 pounds of fruit, at 15c each. These prices are those at which manufacturers in this city have offered to furnish them, but are considerable higher than those paid at the East, and a reduction is expected when the business is once established. The advantages of these packages are so obvious, that many of the largest fruit growers have pledged themselves to use them this season. One great saving over the return package plan will be that the transportation companies will carry the fruit nearly fifty per cent. cheaper, when they are not required to return the empty boxes free. Here, then, is a saving at once of about half the cost of the new package, while the advantage of always sending fruit to market in clean, new boxes, is no inconsiderable one.—*Call.*

GRAPE-GROWING IN A ROOM.—Last year, a member of the Stuttgart Flower Club was successful in raising grapes in his sitting room. He takes a cutting, 3 or 4 feet long, with two fruit buds at its upper end, wraps it in moss, leaving the two buds exposed, and coils it in a flower pot which is then filled with rich loam. The plant is watered with lukewarm, never with cold, water, and a little dung may be added, but not much. The flower pot is placed in a sunny position. When the grapes are formed the shoot is pruned above the bunch, leaving however two leaves to maintain the circulation of sap.

Nearly two thousand farms were taken and improved in Washington Territory last year, by actual settlers. Increase of taxable property, \$2,000,000.

Microscopic Wonders.

The uses and advantages of the microscope crowd upon us in such profusion that a volume would be required to merely enumerate them. There is no department of science, art or manufactures for the benefit of which it is not called into requisition. It is no longer a costly toy, as at its first introduction, but it is a genuine and practical aid to man in almost every research or employment in which he is engaged.

Perhaps in no direction has its wonder-revealing powers been more fully exhibited than in the world of microscopic life which it has made known to us. Equally interesting and useful is the assistance which it has rendered in the study of the various orders of insects, not strictly microscopical, but whose minuteness rendered any practical study of their structure, habits, etc., utterly impossible.

There is a class of insects known as *Acarus*, commonly called mites, and belonging to the spider family, a more accurate knowledge of which, than can be obtained by the naked eye, is almost indispensable to man, in his present advanced social condition. We allude to the parasitical insects which so seriously interfere with him by their depredations upon his food, his domestic animals, the feathered friends by which he is surrounded and most of the vegetables, etc., which he cultivates, and even with his own person.

We have herewith figured two of these insects, the *Acarus sacchari*, found in unrefined or raw sugar, and the *Acarus scabiei*, sometimes found under the human skin in the pustules of a well known cutaneous disease. There are, besides these, great numbers of similar insects, some one of which is peculiar to nearly or quite every quadruped or feathered creature. A microscopical knowledge of the physical constitution, habits etc., of such insects is



THE ITCH INSECT.

almost indispensable in enabling us to rid ourselves and our domesticated friends of their annoyances, which if not arrested often lead to fatal and most destructive results.

Many people were much startled by the reports of the immense number of mites found in raw or unrefined sugar, when their presence was first announced by Dr. Hassel in 1868. The Dr. found them in no less than 69 out of 72 samples of sugar examined; but he did not detect them in a single specimen of refined sugar. The conditions of refined sugar are doubtless unfitted to their existence therein. In one sample of raw sugar he found no less than 500 mites in 10 grains; equivalent to 100,000 in a single pound! When they are present in great numbers they may sometimes be detected by a good eye, unaided by a glass—appearing like little white specks. The "Grocer's itch" is caused by transference of these mites to the human skin. *Mem.*—Don't eat raw sugar.

A mere sight of the picture of the ugly looking little fellow which we have placed by the side of the *Acarus sacchari*, will probably be all our readers will care for, at this time, and we will not inflict them with any further reference.

This class of insects have a rounded oval body, without the usual division between the head and body. They usually have four pairs of legs. Perhaps the most familiar type of this class of insects is the common head louse—*Pediculus Capitis*, and the insect which infests the common barn-yard fowl—more easily detected on the head or under the wings of very young chickens.

One of the cheapest microscopes extant is that advertised in another column, and known as Craig's microscope. This instrument will do very well for beginners, or for cultivating a taste for such studies; but we cannot recommend it as a very effective instrument for practical study.

Sacramento Farmers' Club.

The Club met as usual at the Pavilion yesterday. Owing to the absence of some of the members the business which was ordered at the last meeting was deferred and a discussion entered upon as to offering premiums at the Fair. They recommended to the State Agricultural Society to offer the following premiums: For the best package for shipping small fruits, grapes, peaches and pears, \$5 for each; for the finest exhibition of twenty-five-pound packages of dried apples, peaches, pears, plums, apricots and nectarines, 20 each; also for the best specimen of dried small berries in ten-pound packages, \$20, and for the best model of a fruit drying house, \$15.

These prizes, offered by the Wine Growers' Association, were submitted:

BRANDY.	
Best grape brandy, vintage 1871.....	\$50
Best grape brandy, vintage 1870.....	50
DRY WINES.	
Best white wine, vintage 1871.....	50
Best white wine, vintage 1870.....	50
Best red wine, vintage 1871.....	50
Best red wine, vintage 1870.....	50
SWEET WINES.	
Best white wine, vintage 1871.....	50
Best white wine, vintage 1870.....	50
Best red wine, vintage 1871.....	50
Best red wine, vintage 1870.....	50
SPECIAL WINES.	
Best California port wine.....	50
Best California sherry wine.....	50
Best California sparkling wine.....	50
Best California Angelica wine.....	50
Best sample grape syrup, not less than one gallon.....	20
Best sample grape sugar, not less than five pounds.....	20
The last two articles must be accompanied by statements of the manner of making, in full, and the variety of grapes used.	
GRAPES.	
Best twelve varieties of table grapes, not less than three bunches each.....	\$25
Best six varieties table grapes, not less than three bunches each.....	20
Best one variety table grapes, not less than three bunches.....	5
Best twelve varieties wine grapes, not less than three bunches each.....	25
Best six varieties wine grapes, not less than three bunches each.....	20
Best one variety wine grapes, not less than three bunches.....	5
Best and greatest variety of table grapes, not less than three bunches each.....	100
Best and greatest variety of wine grapes, not less than three bunches each.....	100
Best twenty-five pound raisins.....	50
Best still.....	50
Best grape crusher and separator.....	50
Best and cheapest tank or cask for wine or brandy or storage.....	50
Reserved for special premiums to be awarded at the discretion of the Board of Directors.....	

Santa Clara Farmers' Club.

The Club met and discussed the following question: "How will the root and vegetable crops compare with the cereals as food for stock, and what kinds should be planted; also, the proper manner of cultivating and feeding."

Orrin Dubois, who introduced the subject, had had no experience as to the relative value of root crops. On his land he had raised twenty tons of potatoes, three tons of hay and fifty bushels of wheat. The potatoes would bring \$400; the hay, at \$20 per ton, \$60; and what he desired to know was, Can root crops be fed to stock with profit? He thought that now was the time to plant the roots. His own experience went to show that beets and carrots sown late in the season, and having the advantage of some rain to sprout them, would do better than when sown early, as the weeds come up with the early crop and stint it. It was a matter of great importance to know the right time to plant root crops. In regard to the roots as food, Mr. Dubois was of the opinion that potatoes were excellent for cattle. Taking the root crop, in a market value sense, much more could be made than by the cereals.

Oliver Cottle hadn't much faith in beets as feed for stock. He found that when given to cows that the milk and butter was of an inferior quality. Mixed with other food they might do. Sugar beets were worth about as much as mangle wurtzel, as food, and carrots were worth more than either. If a sugar factory could be started in this section, the farmer could raise sugar beets with immense profit, that is if the land would hold out. Other members of the Club had not experimented with the root crops, and therefore could not give any opinion.

The question for the next meeting is: "What kinds of agricultural implements are the best?"

FARMING ONE HUNDRED YEARS AGO.—In 1790, Franz Fuss, of Bohemia, one of the authorities of his age, spoke of the prevalence of the inventive spirit, which he denounced. He was himself a witness that "the folly had been pushed to such an extent" that people were trying to make sowing and reaping machines. But he "thanked God" that the farmers had still some judgment left, and thus these stupid efforts to get something new met with their proper reception—neglect.

AS AN EXAMPLE of what the farmer would suffer without the aid of his friends, the birds, whom he too often regards as his enemies, it may be mentioned that the descendants of the fifth generation of our plant louse would, if it were not for their enemies, number 60,000 millions. But for the birds, there would be in a short time a complete destruction of vegetation.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Transcript, April 5: WILD FLOWERS.—Not far from the city the hedges are lined with golden buttercups and field lilies, which are quickly culled by those admirers—little children. At Temascal nature has carpeted the earth in all loveliness, dotting the fields with variegated colors, consisting of a natural panorama delightful to look upon.

[We wish we could cull from all the papers of the county for one week, more pertaining to its agriculture and horticulture than is given above.—Ed.]

EL DORADO.

Democrat, March 30: NEW ENTERPRISE.—Mr. L. Landecker, one of our most enterprising merchants, has just started in on an enterprise new to this section—that of gathering and shipping the fibre of the soap root, which grows so extensively all through this section of the State. This fibre, as is well known, is now used extensively in place of moss or hair for beds, etc. It is Mr. Landecker's intention to put in operation, in this city, next season, machinery for cleansing and finishing this material into what is known as "Excelsior Hair." He has now ten men engaged in gathering the fibre, and next week will double that force. We wish him success in this new productive industry.

FRESNO.

Expositor, April 3: CROPS.—A short visit in the country last week was sufficient to convince us that the glowing accounts which we are daily receiving relative to the excellence of the crops in this county were not exaggerated in the least. The rains of last week assisted them materially.

MERCED.

Argus, March 30: TO FARMERS.—In view of the prospects for overwhelming crops throughout the State, would it not be well for the farmer of the San Joaquin Valley to make an organized effort to induce a large immigration of men from the older States to arrive here in time to assist in harvesting the growing crop? Unless something is done immediately, we fear that many farmers will find themselves short of help and be compelled to pay very high prices.

RAINS.—On Tuesday and Wednesday nights of this week, heavy showers of rain fell throughout this section of the country, each of which lasted two or three hours, giving the ground a good soaking. Though the surface of the soil had become quite dry, we could not discover that grain showed any want of moisture, and the late storms will undoubtedly insure full crops throughout the valley.

NAPA.

Tribune, April 4: ACCLIMATIZING EASTERN QUAIL.—On the 15th of March, Mr. Badlam received one dozen Eastern quail from the Acclimatizing Society of San Francisco, and gave them their liberty on the Hotel grounds. Yesterday we were shown the entire covey within six hundred yards of the place where they were released. They have pared off, and unless some pot hunting vandals shoot them, we may expect a great and rapid improvement in the stock of our favorite game. The Eastern quail breed twice each season, and are considered much better game than our California quail.

WILD PIGEONS.—Thousands of wild pigeons have paid our town a visit this year, and hunters have met with great success in bagging them by the hundred. Even the boys have reaped a rich harvest from the sale of wild pigeons trapped in the grain fields. They have been sold at the hotels as low as seventy five cents per dozen.

MOUNTAIN TROUT.—The heavy rains of the past winter have done wonders in stocking all the streams of Napa Valley with that highly-prized game fish, the mountain trout. Much has been said by croakers about the inferiority of our speckled trout, as compared with those of the Eastern States; but Seth Green, who is considered good authority, after a day's sport in Marin County, said he had never seen more game fish or better eating fry than our California mountain trout. California and vicinity affords a fine field for the lovers of the rare sport of trout-fishing.

FEED FOR STOCK.—It is a matter of general remark that the grass this year is very forward and unusually nutritious. Horses and neat cattle feeding on the hills and pastures near Calistoga are in excellent condition.

A gentleman from Berryessa valley reports that the grain in that section is looking better than it ever has before at the same season of the year. An immense crop is expected. The farmers in the valley have been feeding their teams on straw, very little, if any, hay having been cut in the valley last year.

The extra demand that exists for fruit during the winter season is being taken advantage of by Napa Valley orchardists, many of whom are at present engaged in grafting scions of winter apple trees into their old orchards.

A NEW GEYSER.—During the past winter several new hot springs have made their appearance on the eastern slope of Mount Lincoln near the Calistoga Hotel. As the moisture subsided the springs all disappeared with one exception. This spring puffs and steams like an engine and gives unmistakable evidences of permanency.

NEVADA.

Transcript, April 6: GRAIN FIELDS.—The grain fields at Sutton's ranch and other places between this and Grass Valley, are looking very fine, and the crops in the lower part of the county are said to look better than for several years. The farmers have splendid prospects.

REPUBLICAN: RATHER UNUSUAL.—The thunder shower of Monday night was emphatically something new to us in the way of meteorological phenomena. It was accompanied by frequent and vivid flashes of lightning, and a heavy fall of hail. About eight o'clock the clouds broke away, the stars shone out brightly, and Jack Frost went quietly to work. We have not been able to ascertain whether the cold was sufficiently severe to injure the fruit crops to any great extent or not, but presume the early peach and almond trees will suffer.

PLACER.

Herald, April 6: ANGORA GOATS.—Four hundred Angora goats were driven through here last Tuesday on their way to Nevada City. They were the property of the Nevada County Angora Goat Association, we believe, an organized company that intends going into raising this kind of stock extensively. The same company have purchased the band of goats of Tompkins which he wintered at Bear Valley, where the snow was from six to twenty feet deep all winter. This band of goats ranged from half to seven-eighths Angora blood; the kids, a hundred or so, with the flock, were still of higher grade and showed fine, with their white silken fleeces. They were purchased south of San José and shipped to Sacramento on the cars and from thence they were leisurely driven overland to Nevada. The adaptability of the foothill and mountain ranges of this section of the State for this class of stock is no longer problematic.

NOT IN THE PROGRAMME.—The storm of Monday evening was not in the programme laid down by the oldest inhabitant of California weather in this region. The clouds were blacker, the lightning more vivid and continuous, the thunder louder and more rapidly repeated, and the hailstones bigger than has ever been experienced in this part of the country by white men. No damage was done here. Here it was but a dash, and all was over, leaving a bright, clear sky. At Forest Hill, and other points in the mountains, the storm was more protracted, and more rain and hail fell.

SACRAMENTO.

Record: It is a cause of wonder to those who are not versed in the trade to witness the immense quantities of reapers and mowers recently landed here from the East. To the unpracticed eye it seems as if enough had already been received to mow and reap the whole State. Enough are now standing at the depot to cover four or five acres of ground if they were put together in working condition. But we are told that the demand for such implements fully equals the supply.

SAN DIEGO.

Bulletin, March 30: A TRIP TO THE SOLEDAD.—If any one wishes to see verdure let him take a ride out on the Los Angeles stage road, as far as the Soledad, twelve miles from Old Town, or still farther if he chooses. Soon after passing False Bay the scene becomes perfectly enchanting. Waving trees skirt the streams, and the hills are covered with the greenest of grass to their very summits. Wild flowers of every kind are peeping forth among the grass, and the rocks have made for themselves garlands of trailing plants in their eagerness to help embellish this fairy land. Bands of graceful wild horses are luxuriating in the tall grass or

having gorged themselves are reposing on its soft carpet.

One of the prettiest shrubs seen is the wild goosberry. The leaf is a dark glossy green, and the flower much resembles the scarlet fruit of the barberry. Continuing this winding way through varied scenes of light and shadow for two miles, you suddenly emerge upon the Soledad ranch. The ranch house is a comfortable adobe structure, surrounded with trees and fields of grain. The valley is filled with cattle and horses, and looks anything but solitary as its name would indicate. On the crest of the rocky and precipitous hills to the left are pine trees of a species to be found in only one place in the known world besides.

FROM PARADISE VALLEY.—Mr. Asher, just in from this beautiful and appropriately named valley, says everything on his ranch and others near, is wearing a cheering aspect. He says had he known when he first went there what he now knows about San Diego county farming, he could have made money and saved thousands of dollars that he has needlessly expended. He thinks our "dry land" farmers undertake to cultivate too much land. It is a well known fact that a European farmer can make more money on a ten acre farm than an American generally does on forty acres.

SHEEP.—We hear of several persons in this county trying to buy sheep, but none are for sale. The sudden advance in the price of wool from 25 cts. to 48 and 50 cts. per pound, makes sheep raising about the most profitable business one can engage in.

SANTA CLARA.

Index, March 28: The coming harvest in this valley promises to be so bountiful that it is feared a sufficient amount of help cannot be obtained to gather it before the rains of next winter set in. The country for miles and miles on either side of Salinas city is covered with growing grain. The amount is estimated at 110,000 acres. One ton to the acre is not a high figure to put on the yield of this land. This will give us 110,000 tons of grain. Sum this up at the low price of one and one-quarter cent per pound, and it will give the snug little sum of \$2,750,000.

SUGAR BEETS IN SALINAS.—Last week we made some inquiries concerning the beet seed which was sent to this section a year or more ago, and since then we have seen some of the beets growing from the same. Charles R. Beard, whose place is in the southern portion of the town, has a patch growing in his garden. He planted the seed on the 22d day of July last. The beets are now large enough to weigh 20 pounds a piece, and they have only just commenced their second growth. There is no telling how large they will get if they are left in the ground. Mr. Beard thinks they would have been much larger had the seed been planted further apart, as at present the beets are so close together that they crowd. Of course the ground was irrigated before the seed were put in, though if they had been sowed in the planting season this would have been unnecessary. Mr. Beard thinks there is not another section in all the State so well adapted for the raising of sugar beets as this one, and from what we have already seen we think he is correct in his conclusions.

TULARE.

Delta, March 28: THE WEATHER AND THE CROPS.—A gentleman residing north of the Kaweah river, near the line of foothills, informs us that that section is promising well. The weather has been rather dry for two or three weeks, and a shower would, perhaps, be beneficial to the late sowing. The amount of new ground sowed in Antelope Valley is about eight hundred acres; at Stringtown and Bravo about two hundred acres, and on Cottonwood Creek about two thousand acres; while the broad fertile plains near Sand Creek and Mussel Slough is said to be almost one continuous grain field. This and similar enterprises to the south of the timber are all outside the belt to which agriculture in this county was considered a few years since.

WE PRAY FOR RAIN.—It is getting too dry for our highest prosperity. The alfalfa in some sections is turning a little yellow for want of moisture, and the prospect of feed for animals is poor unless we have another storm.

SANTA CRUZ.

Pajaronian, April 4: FARMERS' CLUB.—We are glad to state this week that numerous prominent citizens of this place and valley are now working to form a Farmers' Club in Watsonville. We have often urged the people of the valley to make a

move in that direction, knowing the great benefits resulting to farmers and others from such an organization. It is proposed to meet at the Justices' office in the Snodgrass Block on Saturday next, at 1 o'clock P. M. It is desired that all interested in agricultural and stock matters be present, both from town and the various sections of the Pajaro Valley.

SONOMA.

Exchange, April 6: W. M. Finch of Pleasant Valley, Sonoma county, has lately introduced a new feature into the fruit shipping business in the shape of a box. This is made of very thin strips of wood, being divided into halves by a heavy strip, and possesses a rare combination of qualities in that it is light and strong. These boxes are made at a cost of eight cents apiece, whereas the boxes in ordinary use cost from 20 to thirty-four cents. It is intended to sell the boxes with the fruit, and thus avoid payment of freight for the return of boxes.

MONTANA.

Deer Lodge Independent, March 30: The fine weather of the last week has brought out the disciples of Ike Walton in full force. The trout however, do not bite freely as yet. When the streams get a little higher the finny tribe will be caught by the thousands in all the streams flowing into the Deer Lodge. No finer trout streams exist in the mountains than those of Western Montana. If any of our East Side friends doubt our statement let them come over in May.

MARCH.—While severe storms have prevailed throughout the East this month, we have been having most delightful weather in Montana. We had a little storm last Saturday evening, covering the ground with a couple of inches of snow, but Sunday's sun, assisted by the warm winds, embraced the naked hills and young grass ere the chimes of the evening's Vesper bell, and the entire week has been fair and warm.

LOWER WILLOW CREEK farmers have been busy plowing for some time, preparing to raise large crops. Some farmers on Flint and Willow Creeks will sow from sixty to eighty acres of grain. New farms are being located all the time and the settlement is fast becoming one of the most important in the country.

NEVADA.

Silver State April 6: The amount of grain that will be sown in Pajaro Valley this year exceeds by several thousand acres that of any former year, and it is the belief that there will be an abundance of water from the mountain streams for the irrigation of the entire breadth of land sown.

GARDENING and planting fruit and ornamental trees of the various kinds is being actively engaged in, by those having land suitable for that purpose, and who are situated so that water can be had for irrigation.

BUSY.—Our ranchmen in the valley, to the east of the town, are all very busy at this time getting in their crops. We learn that they are planting much more extensively this year than at any former season. The good prices which vegetables and grain bring in our market has stimulated them to new exertions.

OREGON.

Oregonian, March 29: BEEF CATTLE.—Colonel Farish, commercial editor of the *Oregonian*, received yesterday the following, dated Dalles, March 23, 1872: "We sold to a gentleman of Seattle seventy-five steers, wintered on our ranch in John Day's. They have not been fed any this winter—only what nature did for them. Parties examining them will endorse your views as well as our own in regard to the winter east of the mountains."

CATTLE FROM THE YAKIMA.—Sixty head of beef cattle arrived down yesterday from the Yakima Valley, and will to-day be put aboard the Fannie Troup and shipped to Monticello.

Some of the butchers are ordering sheep from San Francisco to this market.

LAND PURCHASE BY ENGLISH CAPITALISTS.—Portland, March 22: T. Egerton Hogg, in behalf of himself and some English capitalists, purchased, on the 19th inst., all the lands belonging to the Dalles Road Company, amounting to about 600,000 acres.

West Side, March 29: EVERYBODY PLOWING.—Every available man, boy, horse and mule that can be employed plowing is busily engaged. The present is the first chance for doing much with the ground since November, and every nerve is strained to improve the time. One good feature is that we see very little scratching done. All the grain sown this year will be well put in.

POULTRY NOTES.

Cheap Food for Poultry.

One of the great drawbacks to keeping fowls in a confined space and in large numbers, is the difficulty in supplying them with the insect food, which, when allowed to run, they find in abundance, and which is so promotive of their health and laying propensities. Insects and green food are the two staple commodities upon which fowls thrive best—dried grain is an unnatural food, to which they resort only as a matter of necessity. In proof of this, feed a flock of hens with grain until they will eat no more, then throw them a lot of worms or some green, succulent food and they will rush for it with as much eagerness as though their crops were empty.

How to Produce Insect Food Artificially.

Bearing in mind the above facts, German poultry raisers have been for several years studying to derive some cheap way to secure the desired supply. To this end elaborate experiments have been made in breeding different varieties of the common fly, (*musca*) or rather in producing the larvae or maggot from which they are derived. Some varieties of the fly lay their eggs in meat, others in dung—particularly in horse dung. It is said that a single fly will, under favorable circumstances, produce many millions during the season. The plan there is to prepare artificial breeding places, where the breeding of the insect can be controlled and utilized, before it takes wings and flies away.

To do this, make an excavation in the ground, say 2x3 feet and 2½ feet deep; wall up the same with brick or wood, to keep the worms from crawling away and keep the sides from falling in. Then fill up the same as follows: On the bottom place one inch of straw or some similar material; upon that spread first one inch of horse or poultry droppings; then one and a half inch of brewer's grains; next one inch of bog-earth, or slightly moist, rich, loose loam; repeat this succession of layers until the pit is nearly full—say 6 or 7 series. Put a slight roof over the pit to keep out the rain, if any falls, or to keep off the direct rays of the sun in our hot California summers. This done, the flies will soon find the spot and commence depositing their eggs, and in nine days the maggots will be ready for your poultry—feed three times a day, as with grain, throwing out to them the entire contents of the pit.

A pit of the size described will furnish sufficient food for 1,200 hens for one day. Smaller or larger pits can be made to suit the number of hens. If new pits are thus dug and one filled every day, a sufficient quantity of food will be constantly furnished at little expense beyond the trouble of filling in a pit each day.

We presume that sprouted barley would answer the purpose of brewer's grain, when such cannot be readily obtained. No doubt butcher's refuse might also be employed with good success; but with the grain no offensive smell would arise. We suppose (for we have never tried the experiment) that the barley is partly utilized in furnishing a substitute for green food. If not, some kind of green should be added—such as fine succulent grass, the refuse of cabbage, lettuce, etc.

No doubt a single trench might be employed—removing and adding a perpendicular section each, keeping nine sections all the time intact. If the pits are not emptied at the proper time the maggots will escape and annoy you as flies.

This kind of food is much cheaper than meat, if you have to pay much of anything for it, or go far after it. The fowls will also prefer it to animal food of other kind. If refuse meat is used, the common blowfly will probably be liable to furnish a large portion of the product, which is not as good as the varieties which breed in dung.

In feeding, the entire contents of the pit should be removed, and a fresh supply of compost, etc., be employed for refilling. In most parts of California the process of thus emptying and filling the pits can be made continuous for nearly or quite the entire year. But in colder regions, or where it is necessary to prepare a winter supply of food, several extra pits are made from which the worms are first removed, after hatching, and the larvae kept for winter feed (dirt and all being put into casks), the poultry being as fond of them as of the worms.

Choice Poultry, Etc.

We took occasion, a few days since, to pay a visit to the poultry yard of Mr. Finley, whose headquarters, in town, are at No. 113 Leidesdorff street. Mr. F. has been for some years actively engaged in rearing and selling fine poultry and other household and houseyard pets. His residence and grounds are beautifully situated on the corner of Laguna and Washington streets, near, and in full view of the Golden Gate, the main channel entrance to our beautiful harbor. His poultry houses and yards are roomy, arranged conveniently into compartments, and well stocked with the most choice variety of barnyard fowls, pigeons, rabbits, ducks, etc.

Among the fowls we noticed fine specimens of light and dark Brahmans of several different strains; Houdans, La-Flèche, Silver Spangled Hamburgs (great layers, said to average from 200 to 240 eggs a year), yellow and silver Polands, (fine layers but non-setters), white and buff Cochins, various kinds of Bantams—dunk winged, golden, seabright and Japanese Bantams, etc.

His pigeon house was well stocked with pouters, carriers, nuns, priests, jacobins, magpies, turbot, fantails, etc.—a truly happy family of feathered pets, of beautiful plumaged form, presenting, perhaps, the prettiest feature of the entire establishment.

We noticed several varieties of ducks; also rabbits of various kinds, and among others a family of lop-eared Madagascars, such as we described and illustrated a few weeks since.

Our attention was also called to several specimens of China and White Chester pigs, as fine as any we have ever met with anywhere.

A large portion of this collection was carefully selected by Mr. Finley himself during his recent visit to the East, in connection with the California Stock and Poultry Association. His game fowls are from the celebrated poultry yards of Heathwood, at Lowell, Mass.; Bryant, of New York; Parkinson, of Philadelphia; Cooper, of West Chester, Pa., and from other noted breeders.

Mr. Finley supplies eggs for hatching from all his choice fowls, and is constantly reducing his stock by sales, and replenishing it by careful breeding and importation at the proper season. He took twelve first premiums at the last State Agricultural Fair at Sacramento. Perhaps no man on this coast has a better practical knowledge of poultry, their character, habits, quality, etc., than has Mr. Finley.

The Manufactures of San Francisco.

We condense a review of the last year's work of the numerous manufacturing establishments of this city, from the *Bulletin*, which will show more conclusively than anything else could the growth of San Francisco in a business point of view. The year 1871 has been a favorable one for manufactures. The majority of industrial occupations show a material increase in the value of production, the capital invested, the numbers of employees, and the number of factories. In some few cases, however, this is not so, and to the iron interests in particular the first 9 months of 1871 were trying indeed, but these, as well as others so circumstanced, have for the remainder of 1871 taken a decided step in advance, and promise to hold it, if not improve on it, during the present year.

Increase of Business.

Unusual developments have taken place in several branches of manufacture, among which the cigar interest takes the lead, having, during 1871, doubled both in production and value. Among the others which have extended business are the manufactures of boots and shoes, leather, furniture, upholstery, saddlery, jewelry and silverware, champagne, cigar boxes, biscuit and ship bread, and in that of casks, barrels and kegs. The old establishments are continually adding to the capacity of their works, to the number of men employed, and increasing their capital. This city will soon become an important manufacturing center of carriage and railroad car work, and will supply China, Japan and the eastern coast of South America with that article. The woolen mills are constantly increasing their capacity and turning out superior products. The rolling mills have been busily occupied all the year, and we may expect this line of industry to become one of the foremost. Our printers and lithographers are now doing as good work as any on the Continent, and as a consequence very little of this class of work is sent East. The smelting works and refineries have had a most prosperous career.

New Industries.

Among the new industries started within the

past year are the manufacture of gas and water pipe, gas fittings, window shades, kid gloves, Eureka hair, smoking tobacco, paints and varnish, block pavement and fuse, file-forging and wire-making, all of them important.

Among the industries that have received a new impetus are the manufactures of bed-springs, toy and baby carriages, silk thread, furs, vinegar, artificial stone and carriage-springs.

Exports.

The material for all of our most important manufactures such as those of iron, brass, cigars, carriages, furniture, clothing, upholstery, boats, etc., is obtainable from abroad. This is of course the reverse of favorable, and were it not that we were so distant from all competing centers, the greater part of our manufacturing interests would have no existence. This state of things, however, promises to be only temporary. Our export trade is rapidly increasing and includes exports to the East, Europe, all parts of the Pacific coast from Alaska to Chile, to China, Japan, Australia, and all the Islands of the Pacific. They comprise over 50 distinct kinds of manufactures. The

Labor

Required in the manufactures of this city forms no less than an eighth of the population or 21,070 persons. Of this number 8,049, or about 40 per cent., is Chinese. About 10,671, or about one-half are white men, and the balance consist of white women, girls and boys. The average wages per year of each individual is about \$593, or \$13,043,861 in the aggregate. Deducting from the total value of the city manufactures the products of refined gold and smelted lead, we had \$50,676,465, of which the corresponding value of labor forms about 26 per cent. The corresponding value of material making the same deduction is \$25,197,153, forms 50 per cent. The balance, 25 per cent., would with rent, etc., deducted, leave a large profit and would were it distributed amongst the workers, add two-thirds to their wages.

The rates of wages for mechanics varies from \$2.50 to \$5 and even \$6 per day; the average is \$3. That for laborers or helpers varies from \$1 to \$2.50 per day, but averages \$2. That for women and girls varies from \$3 to \$20 per week, but averages \$8. That for boys varies from \$3 to \$12 per week, but averages \$6. Chinese labor is paid at the same rates as is that of boys.

Production.

Deducting the value of the gold refined which we did not add last year to the total manufacture, and also deducting the product of the rolling mill, sugar refineries, and some other industries which we were not able to obtain, the manufactures of 1871 will be \$47,000,000, as compared with \$41,000,000 in 1870. This shows an increase of 16 per cent. during the year. The increase in capital has been 40 per cent., and in material 16 per cent. The increase of production in the cigar manufacture has been 100 per cent., in works in lumber, 66½ per cent., in leather and manufactures, 20 per cent., and in textile fabrics 7 per cent. The following tables give a full exhibit of everything of interest in connection with our manufacturing interests in 1871:

Establishments, Production and Capital.

MANUFACTURES IN IRON AND STEEL.				
Manufact. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Foundries.....15				
Boiler Shops.....3				
Machine Shops.....18				
Iron Doors, etc.....3	\$1,589,592	\$3,013,000	\$1,484,000	
Safe.....1				
Iron Pipe.....1				
Misc. F'dry, etc. 4				
Rolling Mill.....1	135,000	360,000	900,000	
Wire Rope.....1	60,000	90,000	40,000	
Saw.....1	11,000	60,000	80,000	
Bed Spring.....3	36,000	55,200	11,700	
Cutlery.....5	6,416	48,000	14,200	
Crew Bolt.....1	25,000	38,000	20,000	
Tool.....6	9,610	37,000	8,500	
Water Closet (pat.) 2	7,400	27,000	10,000	
Gun and Rifle.....4	12,110	26,800	7,200	
Artesian Well Pipe 1	16,700	22,000	7,500	
Wire Goods.....3	11,000	22,000	14,000	
Electrical Instrs 8	8,000	20,000	100,000	
Water Lifter.....1	5,000	15,000	12,000	
File Cutting.....2	1,000	13,000	12,000	
Carriage Spring.. 1	10,000	22,000	20,000	
Wire.....1	4,150	10,375	25,000	
Mathematical Inst 4	2,383	8,250	6,500	
Ball (ornamental) 1	1,000	2,000	3,000	
Totals.....84	\$1,951,261	\$3,889,605	\$2,776,950	

LEAD SMELTING AND MANUFACTURES OF LEAD.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Smelting Works.. 2	\$720,000	\$1,300,000	\$1,000,000	
Shot Works.....1	251,160	130,000	200,000	
Type.....3	25,760	65,000	140,000	
6	\$1,026,760	\$2,195,000	\$1,340,000	

GOLD AND SILVER REFINERY.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Refinery.....1	\$19,658,045	\$19,658,045	\$362,000	

MANUFACTURES OF GOLD AND SILVER.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Jewelry.....17	\$348,900	\$571,400	\$311,000	
Silverware.....8	72,000	243,000	70,000	
Silver Plating... 6	10,800	36,000	11,900	
Gold Leaf.....1	2,000	8,250	1,000	
Watch Case.....1	4,000	7,308	4,000	
Gold Pen.....2	1,000	4,000	750	
30	\$438,700	\$870,258	\$398,650	

WORKS IN BRASS AND MIXED METALS.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Brass Founding.. 6	\$45,600	\$324,000	\$91,000	
Bell Founding....1	3,000	9,000	10,000	
Gas Fittings.....7	48,600	\$333,000	\$101,000	

TINWARE MANUFACTURES.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Tinware.....70	\$120,000	\$450,000	\$100,000	
Lamp.....1	500	2,000	500	
71	\$120,500	\$452,000	\$100,500	

WORKS IN LUMBER.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Furniture.....16	\$346,250	\$1,025,000	\$900,000	
Carriage, car, etc. 50	377,500	1,074,005	644,305	
Doors, sashes, etc. 9	365,120	1,049,400	421,900	
Packing, etc., bx 3	115,480	275,000	160,000	
Picture frame.....18	50,000	208,000	160,000	
Cooperage work.. 24	50,350	202,300	50,350	
Match.....4	14,398	156,600	50,000	
Trunk.....6	5,431	154,600	83,000	
Bill'd & Bag. t'bl 3	28,090	144,000	133,000	
Wooden ware.....2	67,750	135,000	110,000	
Cigar box.....2	35,000	105,000	80,000	
Carrel and keg.. 1	50,000	100,000	75,000	
Stair making.....0	12,300	50,700	10,000	
Brush.....2	26,300	50,000	30,000	
Stow pavement.. 1	7,200	55,958	500,000	
Turned & c'd w'k 4	10,000	50,000	18,750	
Windm'l & p'mp 3	8,000	30,334	8,000	
Paper Box.....2	16,000	30,000	85,000	
Ship block.....3	10,000	30,000	20,000	
Last.....2	12,500	25,000	13,000	
Belows.....2	8,917	16,900	7,000	
Wind roller, etc. 3	1,500	16,000	12,000	
Boat.....9	5,651	14,605	2,400	
Piano.....2	3,000	8,000	12,000	
Jewelry box.... 2	2,666	8,000	4,000	
Cane, bl. ball, etc. 2	1,500	7,500	2,300	
Show-case.....4	1,800	6,000	1,700	
Baby & toy c'ge. 1	200	1,000	2,500	
186	\$1,685,813	\$5,679,047	\$3,395,605	

LEATHER AND ITS MANUFACTURES.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Boots and Shoes. 26	\$1,200,000	\$3,300,000	\$900,000	
Slippers.....15				
Saddle & Harness 39	350,000	911,800	750,000	
Leather.....26	300,000	713,040	400,000	
Collar.....5	25,000	70,000	25,000	
Hose and Belting. 2	22,000	36,000	23,000	
113	\$1,897,700	\$5,031,440	\$2,098,000	

TEXTILE FABRICS.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Woolen Goods.. 2	\$906,760	\$1,487,165	\$1,550,000	
Fringes.....2	11,777	28,500	8,500	
Silk Thread.....1	13,000	27,000	60,000	
Home Carpet.....1	2,000	5,000	1,500	
6	\$933,537	\$1,547,665	\$1,610,000	

ARTICLES OF CLOTHING.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Clothing.....70	\$1,100,000	\$3,284,000	\$700,000	
White goods.....50	500,000	1,000,000	300,000	
Hats.....14	130,000	232,800	79,200	
Furs.....7	100,000	205,500	125,500	
Shirt.....16	97,560	210,300	48,200	
Umbrella & par. 2	60,000	125,000	20,000	
Paper col. & cuff. 1	60,000	80,000	10,000	
Backskin glove. 2	25,000	75,000	25,000	
Cap.....3	32,500	69,000	12,000	
Straw goods & fa 3	14,665	58,500	15,000	
Oil clothing.....2	6,000	16,000	2,000	
Kid glove.....1	4,000	12,000	5,000	
Neck tie.....2	500	10,000	3,000	
Hoop skirt.....3	2,000	5,000	2,300	
177	\$2,132,632	\$4,383,200	\$1,947,200	

MALT AND SPIRITUOUS LIQUORS, ETC.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Beer, ale, porter. 33	\$804,768	\$1,308,329	\$434,000	
Syrups, cor, bit. 8	215,600	39,700	192,600	
Malt.....4	180,000	268,500	25,000	
Champagne.....3	100,000	181,200	150,000	
Distilleries.....4	300,000	461,728	145,000	
Spirit refining... 3	64,875	128,750	80,000	
Ginger beer.....2	18,000	60,600	10,000	
Soda.....5	29,600	62,300	115,000	
62	\$1,513,338	\$2,865,851	\$1,151,600	

ARTICLES OF DOMESTIC ECONOMY.				
Manuf. Factories.	Val. Mat'l.	Total Prod.	Capital.	
Sugar re'ng & pro. 2	\$2,620,000	\$4,550,000	\$1,100,000	
Flour.....5	1,788,380	2,180,750	650,000	
Pres. fruit & meat 6	800,000	1,675,000	1,100,000	
Pork & beef p'kng. 22	756,542	1,067,768	287,600	
Coffee and spice. 8	545,750	825,650	202,000	
Candy.....28	335,910	568,179	185,160	
Biscuit, ship br'd. 7	216,000	400,000	75,000	
Salt.....4	215,000	370,000	185,000	
Yeast Powder, etc. 3	73,000	189,000	66,000	
Mustard.....1	25,000	150,000	60,000	
Vinegar.....3	35,000	100,000	40,000	
Maccaroni & ver. 3	50,500	87,500	47,000	
Chocolate.....1	30,000	60,000	20,000	
Salmon.....2	4,140	8,125	700	
Herrings.....1	500	10,000	1,500	
96	\$7,790,672	\$12,231,472	\$3,859,960	

PRINTING AND NEWSPAPER PUBLISHING.

USEFUL INFORMATION.

THE LATEST NOVELTY.—Two weeks ago we called attention to a new use for electricity, in causing it to serve the purpose of an errand boy, etc. We have since observed still another novel application of this almost universal agent, in furnishing music for the various households of a town or city, from some central locality. The *modus operandi* is described as follows: "Let us visit the parlor. Our attention is first attracted by what appears to be a piano set in the wall. On opening it no key-board is visible; what is it? We smile and point to a printed programme of the 'Chicago Electro-Musical Society,' hanging on the wall, and then proceed to the explanation that at a central point pianos are played by celebrated performers, and how the keys of these instruments are connected with the works of our piano in the wall by electric wires. A look at the programme shows us that at 2 p. m. Signor So-and-so plays a grand fantasia, or 'Home, Sweet Home,' with his left hand, or performs some other musical feat. We glance at the clock, wait until the hands point to 2 o'clock, touch a knob, and in an instant away goes our piano, pouring out its flood of melody responsive to the touch of the Signor's nimble fingers; Are we tired of instrumental music, and do we prefer vocal? We break the connection and the Signor is silent. The telephone puts us in communication with the central office, so that we can hear every sound. Mlle Nilsson will perhaps favor us? Of course she will; no coughs or colds here; touch the knob, and strains of ravishing harmony entrance our senses."

ELECTRICITY.—We know to-day but little more of what electricity really is than did the ancient Romans, Grecians, or Egyptians. It is an agency or force which has never been seen, measured, or weighed, and in itself is as illusory, intangible, incomprehensible, as the "stuff that dreams are made of." All we know of it relates to its effects, and it is not probable that human knowledge will ever reach beyond this boundary.

It is a force that we have been able to put in harness, and by complying with the conditions under which it acts, we can compel it to serve important ends in benefiting the race. It is probable that at present we understand most of the laws or conditions which govern it, and that we have utilized the agency so far as it is capable of being utilized. Its relations to matter, and to the phenomena of life, are also quite well understood. This being conceded, it is evident that as yet we are utterly unacquainted with a sufficient number of forces to do the work of the universe. Every day the student and experimenter is brought face to face with phenomena which he is wholly incompetent to explain, and although electricity is a convenient agency to which to refer everything inexplicable, yet it is a very unsatisfactory pack-horse upon which to crowd our difficulties.

There are many things yet to be learned, and proud as we are and have reason to be of our philosophy, as the ages roll on, what we know to-day will stand comparatively as the science and knowledge of the ancient Romans stand to the great light of the present age.

HOUSEHOLD ELECTRICITY.—During the extraordinary clear cold weather which prevailed in February and March the electrical phenomena observed in some houses excited much interest. In our own dwelling, for many days, no member in the family could walk across a room and come in contact with a metallic substance without receiving an electrical shock, accompanied with a spark and report. The door knobs, stop-cocks connected with steam radiators, gas-cocks, registers, etc., were so electrically spiteful that they were handled with caution. Our children amused themselves in the evening by lighting the gas with their fingers, and altogether the electrical condition of the atmosphere was quite unusual. In order that this exhibition of household electricity may be witnessed in perfection, it is necessary that the weather be clear and cold, and that the rooms be carpeted with heavy carpets, and these should be insulated by paper matings beneath. Under these favorable conditions, a person shuffling or even walking across a room becomes so charged with electricity that he can ignite a gas-jet readily, by applying to it the tip of his finger. *Boston Journal of Chemistry.*

SIMPLE DISINFECTANTS.—As a simple method of employing carbolic acid, C. Homburg, of Berlin, proposes to saturate sheets of coarse millboard with the disinfectant in question. The sheets may be hung up in the rooms requiring purification, or a small piece may be torn off when a small quantity only of carbolic acid is wanted. Sheets of millboard, having an area of about seven square feet, and containing about one fifth of a pound of carbolic acid, are sold in Berlin for a shilling apiece. Dr. Hagar gives the composition of a disinfecting paste for use as a washing powder. It consists of 100 parts of white clay, 1,000 parts of distilled water, and thirty-five parts of ordinary nitric acid. The mass thus obtained is allowed to stand for a few days, being stirred frequently. The supernatant fluid is then to be poured off, and the clayey mass thoroughly washed with distilled water. Five parts of permanganate of potash are now to be added, and the composition, when dried, is made up into tablets and wrapped in paper saturated with paraffin.

LONDON, with a population of over four million, has only nine daily newspapers.

CATCHING A CANNON BALL.—Kerr Holtum, the Prussian Hercules is astonishing the English by the truly novel feat of catching a ball fired from a cannon. The trick, though a clever one is said to be neither difficult nor dangerous. It is affected in this wise: About two ounces of powder are placed in the gun, then the ball is rammed home, after which the balance of the powder is put in. When the gun is fired, all the powder is ignited, and the flash, smoke, and report are orthodox, but the ball receives propulsion only from the small quantity of powder behind it, and is thrown but a few feet, and quickly picked up and exhibited to the admiring crowd.

ANCIENT AND MODERN PAVEMENTS.—Much has been said about the durability of the ancient Roman pavements, some of which have stood, with comparative little injury, for some 2,000 years. The great reason for this durability arises from the fact that the Romans had no occasion for disturbing their pavements for the laying of gas and water pipes, or for sewerage connections, as the inhabitants of modern cities have continually to do.

MINERAL CAOUTCHOUC.—A Parisian journal reports the finding, in Australia, of a mineral substance resembling caoutchouc in most of its characteristics. It contains 82 per cent. of an oily hydrocarbon. We shall be interested in any further particulars of this discovery, as they may lead, on future investigation, to the production, by synthesis, of one more organic substance.

SHAVING WITH A FILE.—Some practical joker suggested through the *Scientific American* that rubbing the beard off with a pumice stone (a file would answer the same purpose) was a much better way than taking it off with a razor. Some fellow had the nerve to try it, and the result was that he got his beard off and skin too.

MECHANICAL HINTS.

FINE GREEN BRONZE.—First boil the work in a strong solution of potash to get off all the old lacquer and grease; next wash in clear water; after that let the work stand a day or two in a weak solution of nitric acid, then take out, wash, and dry; then coat the article with some good black lead. Polish until you have a good black, glossy surface; then put on yellow lacquer, which, upon a black surface, gives a green bronze.

EXCELLENT VARNISH FOR HARNESS.—Pulverize and put in a jug or bottle half a pound to a pound of gum-shellac, cover with good alcohol and cork tightly. Put the mixture in a warm place. In about two days, if shaken frequently the gum will be dissolved and ready for use. If the liquid appears as thick as thin molasses add more alcohol. To one quart of the varnish add one ounce of good lamp-black and an ounce of gum camphor. An occasional coat of this is also good for rendering boots waterproof.

The Industrial Monthly is the new title of the publication formerly known as the *Technologist*. It is a practical work, full of valuable information for the practical workman—mechanic, manufacturer, builder or engineer—and sold at a price which the class for whom it is intended can afford to give. From it we take the following Mechanical Hints.

DRIPPING OF METALLIC AND SLATE ROOFS.—Very often roofs which are perfectly tight, especially metallic and slate ones, are found to drip at certain times, generally when cold weather succeeds a few moist days. The explanation is obvious. During the damp weather the air in the building becomes saturated with moisture which, when the roof is chilled and the air in contact therewith reduced to a sufficiently low temperature, condenses on the roof and falls in drops on the floor. The remedy is to place a sheet of some non-conducting substance under the roof. Common heavy brown paper, or even newspapers, will answer and cost but a trifle. It should not be placed in contact with the roof, for it is the air enclosed between it and the roof which forms the protection. The paper itself is good for nothing; but when made to enclose an air-space, however small, it effects wonders.

WATERPROOF GLUE.—We have recently met with a very useful form of cement for wooden or other similar articles which are employed for holding water or non-alcoholic liquids. Although the formula is not a very novel one, we know it to be useful and likely to suit the requirements of some of our readers. It stands as follows:—

Alcohol, (spirit of wine) 1 pint; sandarac, 1 ounce; mastic, 1 ounce; common white turpentine, 1 ounce; glue and isinglass, sufficient; water, sufficient. Dissolve the two resins—sandarac and mastic—in the spirit, and then add the turpentine to the solution. Make some very strong glue, and add to it a good pinch of isinglass. Now heat the alcoholic varnish until the liquid begins to boil, and then very slowly stir in the warm glue. The amount of the liquid glue to be added is determined by noting the point at which after thorough mixture, a magma or thin paste is formed capable of being easily strained through cloth. When required for use, the strained mixture is to be warmed and applied like ordinary glue to the articles to be united. A strong junction is effected, which is not destroyed by cold water, and only after a comparatively considerable time by hot water or ordinary saline solutions. *British Journal of Photography.*

GOOD HEALTH.

The Color of Death.

Green, though so beautiful and healthful to the eye, has been most appropriately called "the color of death," for the reason that it invariably contains arsenic as one of its principle ingredients. Whenever we find this pleasing and popular color, it almost invariably contains this poisonous ingredient to a dangerous extent. It enters largely into nearly all the green upon our wall papers, lamp shades, paper boxes, toys, artificial flowers, confectionery, wearing apparel, etc. The popular color known as Scheele's green contains 55 per cent. (more than half) is composed of arsenite of copper—a most deadly poison. Scowinfest green contains even a larger proportion of arsenic (58 per cent) in the form of aceto arsenite of copper. Both of the colors are more commonly known under the name of mineral or emerald green, and form the prettiest, most durable and cheapest shade of green which is made.

It recently came out, in the course of an investigation of the subject in Paris, that one manufacturer of wall paper in that city used up two tons of arsenic weekly! Paper hangings, perhaps, furnish the most prolific source of such danger. Chemical tests and post mortem examinations have fully proven, in great numbers of instances, that death from arsenic has been caused under conditions when the poison could not have been derived from any other source.

The manner in which the poison is communicated has also been made a subject of careful investigation. It has been found that a dust gathered up from rooms covered with green paper contains arsenic in quite noticeable quantities. In dry weather, especially, every jar of the wall, by the shutting of a door or otherwise, liberates from the paper a small portion of impalpably fine dust containing the poison. Every time the room, especially the wall, is dusted, large quantities are brushed off. This dust is inhaled while floating in the room, and hence the trouble.

Closet shelves are often painted green, the arsenic from which is readily absorbed when any warm or moist food, like bread, etc., is placed upon them. When we reflect upon the large amount of paint required to give a heavy, permanent color, and recollect the further fact that over half of that paint before being mixed with the oil is a deadly poison, there need be no wonder with regard to the danger to be apprehended from it. For even the common blocks of water colors, which come in little toy-boxes for children, the green color usually consists of about one-third its weight of arseniate of copper.

Dr. Draper of Boston, recently found that a sample of common *varlatone*, procured from a shop in that city contained no less than 8 1/4 grains of this poison mineral to each square foot of the cloth. When we bear in mind the feeble manner in which mineral colors are held in cloth, some idea may be formed of the danger of handling or wearing such goods.

How to Test the Character of Green Paint.

It is within the power of every person to readily determine the character of green paint or color. Take a fragment of the paper or cloth and place it in a solution of ammonia. If arsenic is present the liquid will assume a bluish color. If a farther test is required take a little of the ammonia in which the paper or cloth has been allowed to remain for some hours and drop it upon some crystals of nitrate of silver. If arsenic is present, it will show itself by a yellow deposit on the crystals.

It is the cupidity, alone, of manufacturers, which induces them to use arsenic preparations in the production of their greens. A very good and durable green can be manufactured without the use of arsenic; but at the expense of rather more cost and skill, and perhaps some diminution in brilliancy. If the public would refuse to buy poisonous colors, they would soon be replaced by those from which no danger need be apprehended.

BZZING IN THE EARS may be caused by organic disease of the auditory nerve or of the tympanum—by some functional disease of the nervous system, by congestion of the brain from any source, and especially by sexual debility or over excitement. Attention to general health should be practiced. Keep the circulation general and to the surface by proper bathing, rubbing, and exercise and ample clothing of the extremities. If it is persistent and troublesome notwithstanding the above precautions, consult a physician.

A MAJORITY of the idiots born are of intemperate parents; but this intemperance may be in the form of over work, or any thing that produces nervous exhaustion, as sensuality, the excessive use of tobacco, or disease of almost any kind. It is said that in the year 1865 there was a less number of idiots born in Norway than in 1855, and Dr. Dahl says it was because there was much less intemperance then than ten years before.

Raw beef, chopped up fine with onions, is now frequently to be seen on the counters in lager-beer saloons in New York. Germans are very fond of it, and they say it is the best cure or preventative of dyspepsia, as well as that of lung diseases.

TO DYSPYPTICS.—If a man wishes to get rid of dyspepsia he must give his stomach and brain less to do. It will be of no service to him to follow any particular regimen—to live on chaff bread, or any such stuff—to weigh his food, etc., so long as the brain is in a constant state of excitement. Let that have proper rest, and the stomach will perform its functions. But if he pass fourteen or fifteen hours a day in his office or counting-room, and take no exercise, his stomach will inevitably become paralyzed, and if he puts nothing into it but a cracker a day it will not digest it. In many cases it is the brain that is the primary cause. Give that delicate organ some rest. Leave your business behind when you go home. Do not sit down to your dinner with your brows knit, and your mind absorbed in casting up interest accounts. Never abridge the usual hours of sleep. Take more or less exercise in the open air every day. Allow yourself some innocent recreation. Eat moderately, slowly, and of what you please—provided it be not the shovel and tongs. If any particular dish disagrees with you, however, never touch it, or look at it. Do not imagine that you must live on rye bread or oatmeal porridge; a reasonable quantity of nutritious food is essential to the mind as well as the body. Above all, banish all thoughts of the subject. If you have any treatises on dyspepsia, domestic medicine, etc., put them directly into the fire. If you are constantly talking and thinking about dyspepsia, you will surely have it. Endeavor to forget that you have a stomach. Keep a clear conscience; live temperately, regularly, cleanly; be industrious, too, but be temperate.—*Boston Journal of Chemistry.*

SLEEPLESSNESS—DISEASED BONES.—I have heard it stated, and also read in medical journals, that if a person has taken very powerful medicine during a spell of sickness, it often destroys the nervous system to such an extent that the person never has sound sleep afterward. Do you think such is the case, or is there any way to recover so as to enjoy good, refreshing sleep again?

Ans. Loss of sleep depends generally on nervousness, the result of disease or of immoderate use of the various hypnotics, as morphine, hydrate of chloral, etc. But it would be quite impossible to give accurate advice without more intimate knowledge of the patient's temperament and physical condition.

Perhaps following a simple hygienic plan might assist. Let the patient exercise moderately, so as to be somewhat fatigued at bedtime; let the supper be light, if taken at all; let the bed be not feather, or the clothing too heavy; let the temperature of the bed-room be not higher than 58° or 60° F. Above all, give up all narcotics of every kind. A warm bath on retiring, with a hard rubbing or wiping dry, is often of service.

The diseased bones should be operated on at once by a competent surgeon, as the necrosis of the bone keeps up such an irritable state of the system that either medication or hygiene would be alike useless.—*Phrenological Journal.*

THE WEAR AND REPAIR OF THE BRAIN.—The notion that those who work only with their brain need less food than those who labor with their hands is fallacious; mental labor causes greater waste of tissues than muscular. According to careful estimates, three hours of hard study wear out the body more than a whole day of hard physical exertion. "Without phosphorus, no thought," is a German saying; and the consumption of that essential ingredient of the brain increases in proportion to the amount of labor which the organ is required to perform. The wear and tear of the brain are easily measured by careful examination of the salts in the liquid excretions. The importance of the brain as a working organ is shown by the amount of blood it receives, which is proportionally greater than that of any other part of the body. One fifth of the blood goes to the brain, though its average weight is only one fortieth of the weight of the body. This fact alone would be sufficient to prove that brain-workers need more food, and better food, than mechanics and farm laborers. *Boston Journal of Chemistry.*

POISONOUS PAPER COLLARS.—A clergyman residing in Sussex county, Delaware, having been greatly troubled with numbness in his limbs, and other symptoms which led his physician to suspect lead poisoning, sent to us the ash resulting from the combustion of one of the paper collars worn by him, and we found upon analysis that it contained carbonate of lead in considerable quantity. This dangerous substance is used in the glazing of some cuffs and collars made of paper, and when the hands and neck perspire or any abrasion of the skin occurs, the lead is absorbed and poisoning results. The brand of collars containing the lead was represented to be what is known as the "Dickens" collars.

VINEGAR BITTERS.—Will you be kind enough to let me know whether you think that Dr. Walker's Vinegar Bitters are as good as he represents them to be in his advertisements, and greatly oblige.

Ans. We regard these bitters only less injurious than others because they contain no alcohol. But when the vendors claim that they have any curative properties whatever, they claim that which is not true. It is, no doubt, one of the most—profitable to the makers—popular and harmless of the quack nostrums. Oh, the gullibility of ignorant, poor, sick humanity!—*Phrenological Journal.*



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.
PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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Saturday, April 13, 1872.

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APPRECIATION.—EDITORS RURAL PRESS: I have taken your paper at a bookstore from the first, but will rather be a permanent subscriber and take it by the year. I think it is an excellent paper of great value to all the tillers of the soil; in fact the best farmers' paper I have read. I would be glad to write for your paper if I could express myself better in English (I am a Danish gardener.) If you think you can make anything of my language, by correction, please say so in answer to correspondents, and I shall be happy to write whenever opportunity offers. C. M. P.

Deaf Dumb and Blind Institute Oakland.
When we find our paper appreciated by professional gardeners, who in too many instances are inclined to think they know about all that is worth knowing of gardening, without reading an agricultural paper, we are inclined to believe we are doing our country a good service. We would be pleased to hear from C. M. P. on any subject upon which he may address us.

H. GREELEY says, that when peas are inclined to run too much to vine, they should be reasoned with; and if that don't stop them, they should be arrested and put under bonds to let the vines alone.

Sewage-Farming and Sewage-Purification.

Sewage-Farming Results.

We have previously spoken of the use of sewage in agriculture and of the results obtained in certain places. Although the question of how to deal with the refuse from sewers has attracted for a long time the attention of city officials in Europe, and although sewage farming has been practiced for some years, especially in England where several so-called "Sewage Farms" exist, yet sufficient data with regard to the results have not been obtainable.

J. Bailey Denton, in a paper read before the Society of Arts at London, has given some very interesting facts, and among them a table of the money realized by the sale of crops on sewage farms in certain localities. The figures show, at least, what is possible under proper management, and we condense the table, giving the average value of the crop per acre for several different crops. The farms, from which the crops were obtained, are all in England, but we give the values in American gold.

Crop.	Highest.	Lowest.	Average.
Italian Rye Grass.....	\$185.00	\$ 63.50	\$118.44
Mangolds.....	220.00	107.25	154.63
Swedes.....	131.25	71.66	98.89
Carrots.....	225.00	175.00	200.75
Parsnips.....	260.00	175.00	196.25
Cabbages.....	175.00	75.00	118.25
Potatoes.....	165.00	90.00	126.66
Onions.....	520.00	175.00	298.75

From these instances, as Mr. Denton remarks, sufficient proof is afforded that, with one crop per annum of a kind which will yield largely to the application of sewage and command a certain sale, the farmer can pay for the sewage a sum sufficient to make the sale of sewage remunerative and have still a handsome sum at his disposal. Although by good farming equally large crops have been produced without sewage, yet the united advantages of manure and water insure crops every year under every vicissitude of season and occasionally allow of two crops from the same land.

Purification of Sewage.

Intimately connected with the utilization of sewage and not to be separated from it, by no means less important, and, indeed, sooner brought prominently before the public, is the purification of sewage. As soon as population concentrates in any locality, forming a town or city of any size, the question of dealing with the sewage from a sanitary point of view is forced upon the authorities, especially in inland towns. And as the country around becomes settled and industrial establishments spring up, the matter becomes one of paramount interest. The recent illness of the Prince of Wales, said to be traceable to impure water or sewer gases, has roused the anxiety of all the British nation, and presented the topic in a striking light. We cannot poison people or spoil streams by letting the town refuse escape freely upon land or into running water. How then shall we deal with the refuse?

Of course the more thickly settled the country, the more important the subject. It is already becoming prominent in our land, and in Europe has long been a vexed problem.

England offers many attempted solutions of the problem. Of late years the A B C process—treating with alum, blood and clay principally—the phosphate process—using phosphate of alumina—and a few other chemical methods have been loudly advocated; but no one has yet attained satisfactory results according to the best information obtainable. A new method, however, has lately been tried, and the results given are so favorable that we here publish a short account.

Denton's Intermittent Filtration Process.

This process has been tried in Wales. Twenty acres of land were divided into 4 equal parts, and the whole was drained to an average depth of 6 feet and deeply cultivated. The surface was laid out in the ridge and furrow form, to allow of the use of hoes and, while growing crops on the ridge, to permit the sewage to flow in the furrows and rise up to the ridge sides with a certainty of being absorbed and of feeding vegetation at the same time. The sewage was equivalent in amount to the discharge of about 30,000 persons. This sewage being let out upon the land, was filtered in its progress from the surface to the drains, depositing in the soil its material so beneficial to agriculture, and issuing from the drains so pure that the laborers were said to quench their thirst with it, and chemical analyses showed it to be of a quality unobjectionable in a sanitary point of view. The yield of the crop sown is also given as very good. We find the value of the crop of cabbages per acre given as \$100.

Our Home Industries.

The Pacific Wire and Wire Rope Co.

We recently visited the manufactory of the above company, which is situated in the rear of No. 427 Brannan street. The main building, two stories high, occupies a space of 35x135 feet. They have 40-horse power available from an adjoining mill and give employment to 20 men. The wire is made from small bars of round iron, as small as can be rolled at a rolling mill—about one-half an inch in diameter. They are rolled in coils and are called rods.

The Process

Of drawing the wire is very simple. The first part of the operation is to soak the rods in boiling water containing a small proportion of sulphuric acid, which removes the rust and scale from them, leaving them bright and clean. The acid is then washed off with clean water and they are dipped into a rye-meal porridge, and then placed in the drying room. This room is about 15 feet square and is kept heated by a large stove. After the rods are dried they are ready for drawing. They are taken into the drawing room thrown over a reel and the workman files one end sharp which he puts through the hole in a steel die, and then applying a monster pair of pincers the machinery draws it through a few feet so that the end can be fastened to the revolving cylinder, which draws the whole coil through much reduced in size. The application of the rye has the effect of preventing the wire from tearing itself against the dies which it would do very shortly without its use. When it is thoroughly dried in, the iron stretches easily and there is no loss in weight whatever in the manufacture.

Coppering the wire is an important branch of the business; it is used for making mattress springs, etc. The wire is soaked in a solution of copper and drawn through the dies as usual; it comes out coated with a beautiful copper color difficult to be distinguished from real copper wire.

The tinned wire is used principally by broom-makers. The coil is dipped in a bath of acid to brighten it and is then drawn through a vat of molten tin, then through a trough of water and coiled up in the drum in the same manner as when drawn through the dies.

The wire is not scraped, but drawn, in the process and no waste occurs. In reducing the iron it is sometimes necessary to pass it through from 30 to 40 holes, gradually diminishing in size, and in doing so it becomes hardened so that it requires annealing. This is done in annealing furnaces, of which the company have three, two large, with a capacity of 3,500, and one small, with a capacity of 1,500 pounds. They are made of cast iron, set in brick work with an open space around them of about six inches. The covers are fitted with clay, and the wire heated to a cherry red heat for about 10 hours. They are then allowed to stand about 48 hours, the covers removed and the wire taken out. It then has to undergo the acid and rye treatment as at first described. In drawing wire from No. 1 to No. 20 three of these treatments are necessary.

All the rods for making this wire are imported from England, and one advantage possessed by the company is that the import duty on rods is 1½ cents per pound, while on wire it is two cents per pound and 15 per cent. *ad valorem*. While they import only three kinds of rods, about 125 kinds of wire are made. At present they are supplying broom, mattress spring, wire, rope and wire cloth makers, and turning out considerable wire for fencing and baling purposes, and propose shortly to erect galvanizing works for galvanizing wire. While at the works we made enquiries as to the cost of

Wire for Fencing Purposes.

Which will be interesting to farmers, to whom cost of fences is an important item.

No. 9 galvanized wire for fencing, (1 pound to the rod), costs 10 cents per rod, and a fence with four wires would cost consequently for wire alone 40 cents per rod. The posts, 4x4, 7 feet long, say 10 feet to a rod, at \$20 per thousand would be 20 cents. Galvanized iron staples cost 75 cents per gross or about ¼ of a cent a piece. With four to each post—2 cents a post. The total cost of this 4-wire fence would be then—wire 40 cents, posts 20 cents, and staples 2 cents—62 cents per rod.

With pickets and one No. 7 wire on top to brace them with, which would weigh 1½ pounds to the rod, the fence would cost more.

The rod of No. 7 wire would be 15 cents. You still need some No. 14 to wrap the pickets with, which would weigh ¼ of a pound and cost 7 cents. The posts cost the same as in the other case—20 cents—and the pickets will cost about 2 cents apiece. They, placed about one in six inches, or 32 in a rod, at 2 cents, would be 64 cents. This would leave three inch spaces between each picket which would make it not only pig, but chicken-tight. This fence with one heavy and one fine wire and close pickets would cost \$1.06 per rod. If the pickets were further apart of course it would cost less.

A fence with two wires, No. 9, on top, and pickets in the ground, would cost for wire, 20 cents per rod, posts, 20 cents more, and the pickets on the same basis as above, 64 cents; total \$1.04 per rod. This is Davis's Patent Picket and Wire Fence, for which Wiester & Co., in this city are agents.

An ordinary rail fence, with two posts in a rod, (some people use more) usually costs about as follows: posts, 40 cents; four boards, or 33 feet, at \$20 per thousand feet, 66 cents; cap piece, 16 cents; nails same as staples, 2 cents; total, \$1.24; without cap piece, \$1.06.

In these calculations labor is not included. The nails and boards always shrink, and the fence needs continual repair. Galvanized wire and staples last a long time, since they do not easily rust. The wire in building a fence should not be allowed to sag. These figures of course would vary with the locality and price of lumber and freight, but wire is much more durable than wood, and requires less care.

The Pacific Wire and Wire Rope Co. is incorporated with a capital stock of \$100,000. The Trustees are Jas. B. Stetson (President), J. M. Eckfeldt, Thos. Nelson, Ed. Kruse, J. Gray, A. Fuhrman and A. S. Hallidie, the latter being general agent, No. 519 Front street.

Tobacco Culture.

EDITORS RURAL:—In your last issue you gave directions for the growing of tobacco plants; the plan suggested was entirely new to me, and I am going to try it, with the belief that I shall succeed; for I think it a capital plan to get rid of the weeds and save a deal of trouble in the early cultivation. Now, if you would go a little further and tell me how to cultivate the plants after transplanting; and how to manage the tobacco after it is grown, to fit it for market, you would do me and perhaps others as inexperienced as myself a great favor. B. B.

We like short articles, they are read with better relish; we therefore avoided going into detail upon the summer cultivation and management of the tobacco crop in our last issue, so long before the advice we might give is needed; and besides we are quite sure that we should be called upon to say something on this subject at the proper season. We shall bear it in mind, however, and will give our ideas of soil, its preparation, transplanting the young plants, their distance, cultivation, topping, suckering, cutting, stripping, etc., in good time for any who may be cultivators of tobacco and readers of the RURAL.

The Petunia.

EDITORS PRESS:—I saw last summer on a visit to Oakland, a beautiful flower, which was called the Petunia. I am not familiar with it or its cultivation; but would like to add it to my rather meager list of old-fashioned, though to me comely and beautiful flowers. How is the Petunia cultivated? Is it an annual or biennial? Father, who is one of your subscribers, says: About your *Petunia*, what do I know? write to the RURAL. Please answer.

The Petunia is one of those vigorous, hardy, profuse-flowering and easily cultivated plants that are especially adapted to culture in large gardens and open grounds in either city or country. It is a great favorite with those who desire effect from a display in solid beds or mixed borders. The brilliancy and variety of colors combined with the duration of their period of bloom, makes it also a desirable acquisition to the green house or as a potted plant for the parlor.

It is an annual grown from seeds, which can be sown in spring, or from now till first of May in any good, rich soil, and when 3 or 4 inches high can be bedded out and they will make a fine summer and autumn display of floral beauty. For fine large single plant display in open ground, set the plants two or more feet apart. This plant like many other annuals of other climes, becomes a perennial in the climate of California.

SEVENTY-SIX horses trotted in 2:30 and under, during the past year.

Notes from Alameda County.

One of our traveling correspondents writes from Alameda county as follows: Of the castor bean, he says, Mr. Clough has two castor bean trees, 15 feet in height, from which he gathered 22 pounds of beans. We wish our eastern readers to bear in mind, that the castor bean becomes a perennial plant or tree, in the climate of California. He also makes note of the fact that Mr. Richard Blacow of Centerville is the grower of Merino sheep, having over 300 in number of high grade, and is yearly improving his stock.

As evidence of this, he has brought the yield of wool up to 30 pounds per head, single fleece, and has one ewe, that yielded a fleece of 32 pounds. This shows what can be done by systematic and scientific breeding; and yet the best sheep in his flock consumes no more food, and requires but little more care than a common woolled sheep of one-fourth the value. Our correspondent speaks of an elder tree on the Sanborn ranch, which is 22 feet high. This tree of California, is, we all know, but a mere bush in the Atlantic States, from which children gather elder berries. Even at the present time, he speaks of much land being too wet to plow.

College of Agriculture and Horticulture.

We notice that at a late special meeting of the Board of Regents of the State University, the following resolution was introduced by Mr. Bolander:

Resolved, That a Select Committee of three be appointed by the Chair to consider and report upon the best means for the early practical opening of the College of Agriculture and Horticulture. Said Committee shall report at the next meeting of the Board. Adopted.

The Chair thereupon appointed upon said Committee Messrs. Bolander, Reed and Martin.

We are glad to see the Regents of the State University waking up to the importance of this great feature in the original intention of Congress in granting the endowment. Both the Congressional and the Organic Acts require its establishment, and the time seems now to have arrived in which the importance of its being is duly appreciated, and we are confident that the great interests of the State, can be in no way so well subserved, as in the immediate conception of the proper designs, and the execution of the same to completion in the least time practicable.

San Joaquin Farmers' Club.

About thirty members were present at the last meeting of this Club. After some preliminary business Dr. Holden read a very interesting essay on Farmers' Clubs, from which we make the following extract:

I would suggest to this Club the following system, which will cost but little time and no money: Let each member keep a record of every fact worthy of note, or that will be of any importance to himself, his neighbor, and to those living in other sections—the kind of soil and how cultivated, the kind and quality of seed used, the time and mode of sowing or planting, the number of bushels raised to the acre, and when and how harvested; the kinds and quantities of fruit products to the acre or tree, how cultivated, mode of irrigation if any; the kinds and number of domestic animals and mode of breeding, feeding and kinds of breed and treatment, the largest amount of milk, butter, or cheese to a cow, her age and breed, and mode of feeding; in short, a complete record of the mode and manner of conducting the farm, and of its resources. By adopting this system you will give to the world a practical knowledge that all communities need, desire and will profit by it.

The essay was received with much favor and the President applauded.

Messrs. H. E. Wright, J. H. Cole, Dr. Holden and H. M. Fanning were appointed a committee to make enquiry into the matter of direct importation of sacks from Europe and report at the next meeting.

Dr. Grattan, W. L. Overhiser and M. Walthal were appointed a committee to confer with the leading Insurance Companies in reference to insuring growing crops against fire.

"Farm Machinery" is the subject for discussion to-day.

To CORRESPONDENTS.—It will be a great convenience to us, if our contributors will write upon one side of their paper only; we frequently have to cut a single page into 2 or 3 pieces and hand it around to as many compositors to put in type, and when it is written on both sides, and often not paged at all, it is next to impossible to get it together correctly.

American Manures.

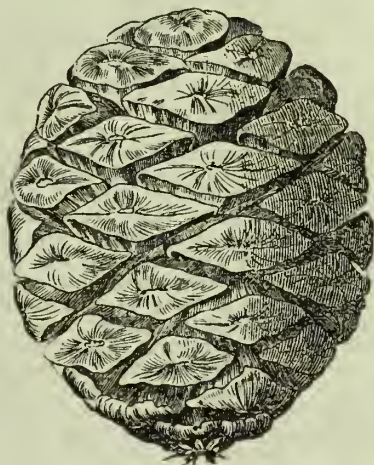
The above is in part the title of a book of 260 pages just received, from the author, William H. Bruckner, P. H. D., of Monroe, Michigan. It is devoted especially to a description of the elements and composition of plants and soils—the theory and practice of composting—the value of stable manure and waste products, etc., etc. It also gives a full and complete chemical analysis of the principal artificial or manufactured fertilizers—their assumed and real value, and a full expose of the frauds practiced upon purchasers.

We have critically examined the work, and with no intention to extol or magnify its merits beyond its deserts, we pronounce it just the right work, at the right time, and should be made a common hand book of reference with every farmer.

Cone of Sequoia Gigantea.

This Sequoia is a native of California only, and though ranked among the tallest and largest of trees, its seed bearing cones are among the very smallest of all the conifers. The trees are found principally in Calaveras, Mariposa and Fresno counties, but are seen in a few other places, in the Sierra Nevada. They attain a height of between three hundred and four hundred feet, with diameters from one inch at a year old, to 37 feet, or 112 feet in circumference at the base of the trunk.

There was one tree in the Calaveras grove that when first discovered was prostrate, that



must have measured when in the vigor of its growth very nearly 450 feet high. The grove was first discovered by one of a party of American miners on a hunting expedition in the mountains in 1850. The seeds have been widely disseminated and the trees are now found growing luxuriantly in nearly all parts of the United States, England and many places on the European continent, apparently as healthy and vigorous as in their native soil.

The illustration herewith given shows the natural size of the cones.

Short Horns—Improved Stock.

We have received a catalogue of stock owned by R. G. Dun, of Plumwood, near London, Madison Co., Ohio. Mr. Dun is an extensive dealer in fine animals, and offers some of the best blood in the country to connoisseurs.

We would like to urge upon stock growers the importance of giving greater attention to the improvement of their stock, by the introduction of more of the finer breeds, and the best animals of those breeds. We propose to say a few words in regard to the famous breed, known as the Short Horns.

All cattlemen conversant with the origin of this breed, are aware that Richard Booth and Thomas Bates of England were the original, great contending breeders of their day, and acknowledged as the most successful breeders in Great Britain. Mr. Bates had one particular branch or family of short horns, to which he was particularly devoted, called the Duchess family, and which seemed to be equally the favorites of the most of the cattle breeders in England.

At the death of Mr. Bates, his herd was sold, a few of them passing into the hands of Samuel Thorn, of Dutchess county, N. Y., he being the original importer. We next hear of their progeny in the herds of Messrs Sheldon, Wolcott and Campbell of New York Mills. R. A. Alexander then purchased two animals of this family, directly from Col. Townley, of Yorkshire, England, and this is the source from

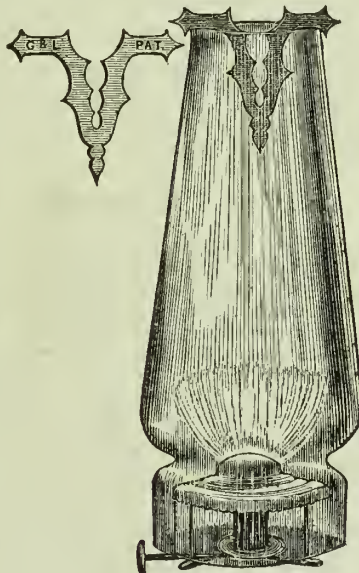
whence the pure Dutchess in Mr. Alexander's herd have descended.

It is now well understood and admitted that the Dutchess branch of the Short Horn family, stands higher than any other, both in the United States and Great Britain. Mr. R. G. Dun purchased of Mr. Alexander, his famous "20th Duke of Airdrie," and for a number of years has been crossing his herd of pure bloods, with this family, thus his entire stock at the present time partakes strongly of, and in fact is the highest grade of Dutchess known to stock men.

To show the value attached even by Englishmen, to the Dutchess blood of American growth, we instance the sale of two heifers of this family for \$13,000, to go back to England, for the improvement of English stock, the purchaser as we understand, being Lord Dunmore. This should satisfy our stock men of the value and purity of the stocks offered by Mr. Dun in his advertisement, to the fanciers of one of the most valuable breeds of animals known to the profession. We will be pleased to show Mr. Dun's catalogue to any one who may wish to examine it; and we also refer for further information to Mr. J. A. Dun, 320 Cal. street, S. F.

A Device for Preventing the Breakage of Lamp Chimneys.

The accompanying cut is a representation of a device for preventing lamp chimneys from breaking or cracking, by the contraction and expansion of the glass, under ordinary heat and



usage. This device consists of a piece of metal which is made of the shape shown, and is suspended on the upper end of the chimney so as to hang down a short distance in it, which, the inventors claim, serves both to regulate the draft and equalize the heat.

The greatest disadvantage there is in using lamps is the frequency with which the chimneys break, and numerous contrivances have been made to obviate it; this the inventors say will effectually prevent the breakage, as has been fully proven by numerous experiments. The piece of metal can of course be applied on any chimney, and it is claimed that by its use the flame may, even when first lighted, be turned up so as to come out at the top of the chimney without breaking the glass by sudden expansion. The cause is attributed to the division of the draft at the upper end of the chimney by the hanging plate whereby it is steadied and the heat regulated. This little invention has been patented through the Scientific Press Agency by C. M. Gruby and T. I. Lichtig. The agent is O. V. Gerzabeck, No. 563, Market street.

MORE ABOUT PEANUTS.—EDITORS PRESS:—Will you let me trouble you with one or two questions about peanut culture? How many do you plant in a hill? and do you spread the seed in the hill or not? Would there be anything gained in soaking the seed in hot or warm water.

A NOVICE.

Plant from 3 to 5 kernels or grains in each hill; three would be enough if they all grew. The first hoeing and weeding is greatly facilitated by planting the grains very nearly or close together. Take the seed from the pods not more than a day before planting, the same day is better; and plant dry in a warm soil; cover 1½ to 2 inches deep, or if the ground be very dry on the surface, then 3 inches, without soaking the seed.

THE Order of Knights of Pythias was founded in the City of Washington in 1864.

Rural Press—Lake Erie.

When subscriptions roll in upon us wholly unsolicited, from the warm and genial lands of Texas, Louisiana and Florida; as well as from Maine, Canada and the ice-bound islands of the northern lakes, we cannot but think that our continued efforts to make the Rural a reliable and readable paper wherever it may find its way, are fully appreciated. We take the liberty to extract from a letter just received from a gentleman of Put-in-Bay Island, Lake Erie, Ohio, the following:

EDITORS PRESS:—Enclosed find P. O. order for five dollars, for which please send Rural Press one year, commencing 1st of April next. I am led to subscribe for your paper from reading some copies I procured from Messrs Roman & Co., of your city, and I have decided (D. V.) to make California my future home, and hope to become a permanent subscriber. I am indeed much pleased with the Agricultural Notes from various parts of your beautiful and glorious State, and think the advice on the cultivation and growing of forests and timber, exceedingly sound and good. We here are engaged in the cultivation of the grape and making of wine. The winter now closing has been uncommonly severe and steady, we had it two degrees below zero yesterday A. M. (March 20) and have heavy and strong ice still all over the west end of Lake Erie, consequently we cannot have an early spring. We have improved the fine driving during the winter; could drive from shore to shore, and teams have crossed from Long Point in Canada to Erie, Pa., a feat which has not been done since 1813.

Our grape buds are slightly injured, we may lose seven-eighths of our crop by the extreme cold.

W. E. S.

Put-in-Bay, Ohio, March 21, 1872.

Further information which our correspondent communicates, having reference to the island and its attractions, may interest our readers. Commencing with a historical record, he says: Put-in-Bay derives its name from the fact that Commodore Perry put in here with his fleet in 1813, after his memorable victory. The island is about 16 miles in a direct line from Sandusky, Ohio—and the loveliest of all the islands. It contains 1,700 acres, is three miles long and has 800 inhabitants.

The bay is a lovely sheet of water, surrounded by a group of islands, all in the highest state of cultivation, being covered with vineyards, fine residences and flower gardens, offering opportunities for delightful boat rides and pleasure excursions. Its crystal waters are beautifully supplied with Black and White Bass, White Fish, Pike, Pickerel, etc. There are no better fishing grounds in the world than among these islands, and fishermen from all sections resort here for sporting. Moonlight excursions on the bay and among the islands are truly romantic and delightful.

All the varieties of staple and fancy grapes are grown among the islands. Large quantities of wine of a superior quality is also made here.

Jay Cooke, the great American banker, has lately purchased Gibraltar, which contains about five acres, and rises forty feet above the Lake—a lovely spot of earth, covered with natural forest trees—and erected thereon a splendid summer residence, and otherwise ornamented and beautified the same. He and all others who have seen this island region, agree that it is the loveliest place in the United States for spending the summer.

These islands are celebrated for their healthy, invigorating and bracing atmosphere, and many from all sections come here to recuperate their wasted strength.

These islands are also rich in geological interest, affording to the naturalist a broad field for investigation. Many scientific visitors come here annually. Put-in-Bay Island itself is noted for its many and curious subterranean caverns, some of which are very large, with smooth floors, high walls, and clear, cool miniature lakes, apparently designed by nature to refresh and please the weary visitor.

AYER'S CHEMICAL PAINT, put up in this city by the California Paint Co. is worthy of the attention of farmers and others in want of a cheap and durable article. In a recent visit to the works, we noticed a number of additions by way of improvements, among which may be mentioned a couple of 24 inch burr mills, one for grinding mixed paints, the other for dry pigments. For further particulars we refer to card in advertising columns.

CHROMO.—We have received from Briggs & Bro., Seedsmen and Florists, Rochester, N. Y., an artistically executed collective chromo of beautiful flowers.



Tact in Social Intercourse.

It is worth a great deal to know how to touch people in the right way. The man whose nature is thermometer-like in its susceptibility to the atmosphere and condition in which those persons live whom he meets from day to day, has an incalculable advantage over one who lacks in this respect.

The possessor of this gift of tact is always making friends and finding a warm place in their hearts, while his neighbor, who is fully his equal in other endowments, is constantly placing himself in a position where he both loses the sympathy and repels those toward whom he may cherish only kindly feelings. Edward Everett said of Abraham Lincoln, that he was one of the most perfect gentlemen he had ever met. The compliment of the polished orator recognized that which was better than mere outward manners, for the etiquette of the White House never smoothed out the angularities that days of toil and poverty had wrought into that iron frame. It was the noble heart of Mr. Lincoln that won the encomiums of perfect gentlemen, alike from those whose lives had been spent in palaces and in hovels.

The inner revelations of his social and public life show how wonderful was the tact he possessed. During those days of war persons of every shade of character and position asked for admittance to his presence, and the story of the many-burdened man, forgetting self in his interest for others, has gone into all the world. It is the sort of tact shown in this grand life that touched every class of men with an intuitive knowledge of their need that is worth a fortune to any one.

There is a selfish tact, a spurious article, that would be all things to all men in order to please them, that may be positively injurious and worthless, as far as the welfare of others is concerned.

While tact is largely a gift of nature, it is susceptible of cultivation by care and education. Men are to be studied. Age, business, social relations, and personal history and peculiarities should be considered. That approach that wins the heart of a child will not answer when you come to those whose heads are gray. Ruining thoughtlessly against the personal habits and moods of others, leads to the loss of their good-will, and gains only their dislike. Some men change in their feelings very much like the weather, and it is wise to note if the wind be in the east or the west.

Absent-minded persons, all-absorbed in some individual thought or pursuit, are constantly blundering into mistakes in these respects; it requires a keen eye and a warm heart, constantly alive to the interests of others, in order to use that tact which always speaks and acts at the right time and in the right way. In business and professional life alike, tact is necessary to success. The most successful clerk in the store is the one who knows how to please and meet the wants of customers of every class. Without tact the lawyer will be sure to lose both his cases and clients.

The physician, by his manner and words in the sick room, often heals faster than by the medicines he prescribes. The minister who has a sympathetic heart that touches those who belong to every grade of society, and neither carries his head so high or studies so closely as to get near-sighted, and thus fail to observe small folks and little folks, will win the love of the community and have full congregations, while others, in certain respects more able, will be looking about for a parish.—*Phrenological Journal*.

NATURE'S AMUSEMENTS.—Everything in nature indulges in amusements of some kind. The lightnings play, the winds whistle, the thunders roll, the snow flies, the rills and cascades sing and dance, the waves leap, the fields smile, the vines creep and run, the buds shoot, and the hills have tops to play with. But some of them have their seasons of melancholy. The tempests moan, the zephyrs sigh, the brooks murmur, and the mountains look blue.

How Glass Paper Weights are Made.

Every one knows these paper weights of solid colorless glass in hemispherical shape, in the center of which are bouquets, portraits, and even watches and barometers, etc., etc., but few persons know how or by what means these things are incarcerated in the center of the glass.

The first thing to be done is to sort and arrange a certain quantity of small glass tubes of different colors in the cavities of a thick molten disc, disposing them according to the object to be represented. This done, the tubes are inclosed between two layers of glass; to do this they begin by placing on one side of the disc which contains the tubes a layer of crystal, to which the tubes soon become attached. When this is done the disc is removed and a second layer of crystal is placed on the opposite side. The object being placed in the center between these two layers of glass thus soldered together, it becomes necessary to give the ball its hemispherical form, which is done, when the crystal is again heated, means of a concave spatula of moistened wood. It then only remains to anneal it and to polish it on the wheel.

That a glass ornament, being covered with a layer of hot glass, should receive no injury or change of color, may be easily understood from its refractory nature. In paper weights in which are placed portraits usually of a yellowish color, these profiles are made of refractory earth, and may thus bear well a heat which only softens glass. These paper weights have been carried to perfection only by French artists. The sole difficulty in their manufacture is in avoiding internal air bubbles, which would more deform the object, as any defect would be much more increased by the thickness of the glass.—*Wonders of Glass Making*.

Keep It to Yourself.

You have trouble; your feelings are injured, your husband is unkind, your wife frets, your home is not pleasant, your brethren do not treat you just right, and things in general move unpleasantly.

Well, what of it? Keep it to yourself. A smoldering fire can be found and extinguished; but when the coals are scattered who can pick them up? Firebrands when together can be trodden under foot, but when tied to the tails of Samson's foxes, it is difficult to tell where they will burn.

Bury your sorrows. The place for sad and disgusting things is under ground. A sore finger is not improved by pulling off the rag, and sticking it in everybody's face; tie it up and let it alone; it will get well itself sooner than you can cure it. Charity covereth a multitude of sins. Things thus covered are often cured without a scar, but when once published and confided to meddling friends, there is no end to the trouble they may cause.

Keep it to yourself. Troubles are transient, and when a sorrow is healed and past, what a comfort it is to say, "No one ever knew it until it was all over with."

CAN A MOTHER FORGET.—Can a mother forget? Not a morning, noon or night but she looks into the corner of the kitchen in which you read Robinson Crusoe, and thinks of you as yet a boy. Mothers rarely become conscious that their children are grown out of their childhood. They think of them, advise them, write to them, as if not full fourteen years of age. They cannot forget the child. Three times a day she thinks who are absent from the table, and hopes the next year at the farthest, she may have "just her own family there; and if you are there, look out for the fat limb of a fried chicken, and that coffee which none but everybody's own mother can make. Did Hannah forget Samuel? A short sentence, full of household history, and running over with genuine mother-love is tellingly beautiful. "Moreover, his mother brought it to him from year to year, when she came up with her husband to the yearly sacrifice."

A mother mourning at the first born's grave, or closing the dying eyes of child after child displays a grief whose sacredness is sublime. But bitterer, heavier than the death stroke is the despatch of a son who rushes over a crushed heart, in vices which he would hide even from the abandoned and vile.

HON. PETER C. BROOKS, of Boston, who left one of the largest fortunes ever amassed in this country, on being asked what rule he would recommend to a young man as most likely to secure success, answered: "Let him mind his own business."

How I Learned Self-Reliance.

It always seems to us old men as if the boys of the present day did not have half as hard a time as we boys of the past generation had, and as if the lessons of life which we learned in roughness and toil and suffering, you boys of to-day were either not learning at all or learning with kid gloves on; or walking in paths of ease and comfort. Most of us learned self-reliance in a hard school. This quality of self-reliance is one that every boy should possess, but which he can hardly obtain unless he is tried and made to rely upon himself. A man without self-reliance is a poor stick, and to avoid being a poor stick of a man, he should learn the lesson while he is a boy. I say there is nothing like teaching a boy to depend upon himself. That's the way I learned to swim. I tried for weeks to learn in shallow water, but never had confidence enough in myself to strike out and really try. At last, one day as I was ducking around near the shore, that horrible monster known as a "big brother" took me on the deck of a schooner near by, and threw me over the outside rail in deep water, and told me to swim for my life—and I did. I struck out for very terror, and to my astonishment I saved myself, and from that moment I was never afraid of the water and could swim well. That rude, rash treatment of my brother's gave me the self-reliance which I so much needed. I was early taught in other things to rely upon myself, and I now have reason to be thankful for it.—*Christian Review*.

BEST PARLORS.—Almost every American house possesses one of these dreadful altars, erected to what unknown goddess it is impossible to guess. It is a Bogy, before whom from time to time people burn gas in chandeliers of fearful design;—to whom are dedicated flagrant carpets, impossible oil paintings, furniture too gorgeous for common day and shrouded therefrom by customary Holland. Musty smells belong to this Deity, stiffness, angles, absence of sunlight. The visitor, entering, sees written above the portal: "Who enters here abandons—conversation." What is there to talk about in a room dark as the Domdaniel, except where one crack in a reluctant shutter reveals a stand of wax flowers under glass, and a dimly described hostess, who evidently waits only your departure to extinguish that solitary ray? The voice instinctively hushes; the mind finds itself barren of ideas. A few dreary commonplaces are exchanged, then a rise, a rustle, the door is gained and the light of the blessed sun; you glance up in passing—flap goes the blind, inner darkness is again resumed. Bogy has it all his own way, and you thank your stars that you have done your duty by the Browns for at least a twelve-month!

THE BRIGHT SIDE.—Look on the bright side. It is the right side. The times may be hard, but it will make them no easier to wear a gloomy and sad countenance. It is the sunshine and not the cloud that makes the flow. The sky is blue ten times where it is black once. You have troubles, so have others. None are free from them. Trouble gives sinew and tone to life—fortitude and courage to man. That would be a dull sea, and the sailor would never get skill, where there was nothing to disturb the surface of the ocean. What though things look a little dark, the lane will turn, and night will end in broad day. There is more virtue in one sunbeam than a whole hemisphere of clouds and gloom.

OLD-TIME COMBS.—Forty years ago, ladies' combs, which were larger than ladies' bonnets are now, used to be made in Newburyport, Mass., for the South American market. They were often two or three feet wide, encircling two-thirds of the head, and from six inches to a foot high on the back, the top being wrought in open-work; and to these the Spanish-American ladies attached their veils. One comb consumed three horns, or an equal quantity of shell; and as much of the work was done by hand and with the saw, and the polishing was entirely manual labor, the prices were high—from twenty to fifty dollars.

RULES FOR THE GOVERNMENT OF CHILDREN.—The following rules for the government of children, which were first presented in one of Jacob Abbot's books, are said to have been of great service to many successful teachers:

When you consent, consent cordially.

When you refuse, refuse finally.

When you punish, punish good-naturedly.

Command often. Never scold.

Young Folks' Column.

Astronomy for the Little Folks.

I suspect that not one child in fifty, under twelve years of age could tell me exactly how any one knows that the moon is really larger than a soup plate, or whether it is as far or further away than Boston.

Now don't shrink your pretty little shoulders, and laugh, and say I must be crazy to think that you don't know that. It is not so easy a matter to know many things just right; and I hope you will not say one boastful word about your knowledge of the subject, until you have thought it over carefully, and seen how much you really know certainly. Wise men are very cautious indeed, and know what they say, and the reason for it.

No one ever comes from the moon country, to give us descriptions of it, and one has a great deal of trouble in studying it, since he cannot go there. The "man in the moon" is not at all social, either, in his way, as you know, and I never heard of any one getting any sort of information out of his ugly mouth. We have to learn things the best way we can, all by ourselves, one thing at a time, and that of course a very long time. I will tell you to-day about the size of the moon, and how men are able to find out exactly what its size is.

The moon is a globe, whose diameter is two thousand miles; about one-fourth of that of the earth.

"Now, how," do you ask, can one know that?"

There is a method something like this: Let us take, for example, a cent piece, which measures about an inch in diameter, and let it be placed between the eye and the moon, at any distance from the eye. It will be found on the first trial, that the coin will appear larger than the moon; it will, in fact, completely conceal the moon from the eye, and produce what we may call a total eclipse of the moon. Let the coin be moved farther from the eye, and it will then appear smaller, and will seem to grow less in size as its distance from the eye is increased. Let it be removed until it seems exactly to cover the moon, and neither more nor less.

If the distance from the coin to the eye be measured, it will be found to be about ten feet or one hundred and twenty inches, or what is the same, two hundred and forty half inches. But it is known that the distance from the moon to the earth is about two hundred and forty thousand miles; so that it follows in this case that one thousand miles in the moon's distance is exactly what half an inch is to the coin's distance.

Now you all understand, I suppose, how, in geography, you measure a country on a map, when you know the scale of the map; as, for instance, you have the map of Illinois before you, made on a scale of fifty miles to the inch, and find, by measuring, that there are about two inches of the map from Chicago westward to the limits of the State, you could at once be able to say that the real distance between those points must be about two times fifty, or about one hundred miles.

Now, in the case of measuring the distance across the moon's disc with the coin, we have found the scale to be half an inch to one thousand miles; since, then, the coin measures half inches in diameter, the moon must measure two times one thousand miles, or two thousand miles in diameter.—*Little Corporal*.

SAVE YOUR DIMES.—We say to all the children, save your dimes. Don't eat them. Many children spend all their dimes for candy or something of the sort, and then eat the candy. It amounts to about the same thing as eating the dimes. Better save them till enough is gained to buy a good book, then read the book carefully, and you benefit your mind, which is equivalent to putting the dimes into your mind, where they will always stay. A dollar's worth of knowledge well stored up is something that will never leave one, and will always be of service.

A THOUGHTFUL LITTLE GIRL.—Little Mary Wounor, of York, Pa., discovered a broken rail in a railroad track the other day, and thereupon swung her apron to the engineer of an approaching train in so energetic a fashion that he stopped his train and saved it from destruction. It is not every girl or boy either who would have been so thoughtful as little Mary was.

An unhappy person is not unlike a skein of silk, all snarled up.

DOMESTIC ECONOMY.

Cookery.

A celebrated chef in Paris, once composed a marvellous *entree* from two or three pairs of soiled white kid gloves, and succeeded effectually in deceiving the palate of a connoisseur. Could the basis of any *plat* be more economical? The gourmet who dines off truffled turkey, turtle, and ortolans, most certainly employs good cookery, but cannot claim to be considered an economist; while, on the other hand, the mutton chop of the epicure in humbler life may be rendered a delicate and palatable repast, as well as strengthening and refreshing to the system, by the agency of good cookery, whereas bad cookery will destroy the nutritive properties of the meat, and renders the chop a lump of concentrated indigestion. Brillat Savarin has said, in his admirable work on gastronomy, that "a great cook is a greater man than a great astronomer," and it is to be regretted that this work has never been translated into the English language for the benefit of those of his disciples who practice the art, but who do not understand the French language.

Give a real culinary artist fuel and materials, and the science of cookery in such hands will prove a fathomless mine of inexhaustible variety, a boundless source from which will spring delicate dishes, mysterious and refined. It is sometimes said:—"There is nothing new under the sun;" but the chemistry of cookery refutes the axiom; for when the *Almanach des Gourmands* was published by De Perigord, people said that he had surely expended the sum of his knowledge on the dishes contained in the first year's number; but another year, and yet another, saw issuing from that marvellous brain of that prince of cooks the endless coil of gastronomic delight, until even variety became monotonous, and the traducers of the art were silenced.

The higher the state of civilization in any country, the greater is the perfection to which the art, or rather the science, of cookery is brought; for cookery is more a science than an art, the result of study than of natural talent. The untaught cook can never make a good soup, and a lifelong experience, reflection, study, and practice, are necessary to produce a *Creme*, a *Ude*, or a *Gouffé*. There is very much to be said in favor of the simple and undisguised form of good cookery, and in adapting the art to the refinements of civilization, we contend that we are reducing, not increasing, the chance of indigestion; while on the one hand we would avoid the meagre fare of a miser, on the other we would inveigh against the coarse gluttony of a gourmand. The leg of mutton in the hands of a French woman forms a delicious tureen of palatable and nourishing soup, as well as a substantial joint, as *bouilli* or *braise*; but our American woman's ideas rarely rise above the oven; and the result is too often an unpalatable, greasy dish, of which all that can be said is, that it stays the cravings of hunger at the expense of the digestive organs. Our cookery in lodging houses is detestable, and may be summed up in one word—grease. In our middle classes very little skill is shown in the preparation of food, and amongst the poor none whatever.

In cases of extreme debility, good cookery is a *sine qua non* to recovery; the invalid cannot digest the greasy, nauseous beef-tea of ordinary life; and the weak, watery stuff, too often imbibed, has led, if not to the utter prostration of many an already declining constitution, at least to a dangerous state of wild irritation in the digestive organs. Hence our medical men refer their patients to the great invention of the world-renowned Liebig; but speaking as a practical cook, I unhesitatingly assert the superiority, both in flavor and nutritive properties of good beef-tea made scientifically from fresh beef, over any concentrated essence of beef yet invented.

The reasons for this are many and obvious, as the process of strong concentration must destroy in some degree the delicate nature of the essences of the meat. But we must leave, as we have before said, the subject of dietetic chemistry in the hands of abler and more expert advocates—men who have given their time and attention to it. Yet in the discussion of our subject we must trench a little upon it, as chemistry and cookery are twin sciences, if not branches of the one and the same science; for the skilled cook, like the chemist, amalgamates his materials with a due regard to their different natures, and at such periods in the process of cooking as careful consideration has taught him will render them most amenable to the chemical action of fire; any deviation from the proper quantities, time, or degree of heat, are fatal to success, and would produce a totally different result, in many instances, from that desired. Hence the necessity for much care and study, ere the tyro ventures to essay his skill in the practice of the culinary art.

If we admit the primary expense of good cookery (which we do not), we say that it is most economical in the long run, for it will be found to reduce the doctor's bill; and no one is louder in praise of scientific cookery artistically administered than the medical man of the present day. We think that enough has been urged for the cause of cookery, to persuade our readers that this is a subject of vital importance to them all, and may claim as much of their attention as any other phase of sanitary reform, or any question of public safety.—*Food Journal*.

The Tea Hour.

The tea hour, in thousands of happy homes, is the hour of the day looked forward to with most intense delight, as it calls around the table the members of the household after the various cares and labors of the day are completed, and a season of rest and social intercourse is anticipated. The dining hour is with most people the time when the appetite is craving, and the sense of hunger is apt to beget a considerable amount of impatience or perhaps fretfulness.

If there is any hour in the day when the man of business is unamiable or testy under his own roof, it is just before dinner, when he is waiting for the signal which is to summon the family to the dining room. Children, guided by their quick instincts, seldom ask for favors at such unpropitious moments; and often family pets, the dogs and cats, learn to skulk away into some quiet corner, and wait until the meal has fairly begun, before they venture to intrude themselves into chairs, or come within reach of the paternal boots.

Dinner may be called the *business meal*; it is the one which requires the most labor and expense to provide, and it is too apt to be partaken of when the mind is loaded with the business perplexities of the day. In the nature of things it cannot be the season when the family shut themselves in from the outside world, and turn the current of their thoughts upon pleasant themes.

At breakfast there is more or less hurry. The mind, refreshed with sleep, is elastic, confident, eager to encounter the labors and duties which have come with the morning sunlight, and there is little inclination to talk or think of other matters than those which are connected with the work of the day. It must be conceded, that in this country the tea hour is the time, and the tea table the place for the introduction of topics of conversation which require a forgetfulness of everything that is personal or selfish. It is peculiarly the time and place for social converse upon the wonderful and beautiful things in Nature, which modern research has so clearly unfolded, and which when understood are so well calculated to make us not only wiser but better.—*Journal of Chemistry*.

In view of the above is it not the duty of every parent to introduce at the table topics of conversation such as will interest and improve the minds of the younger members of the family? Every number of the Press contains many articles which might be profitably introduced as the basis of such conversations. There is no family which may not be made wiser, happier and better by having its thoughts while at the table turned upon interesting facts in science and art, as presented in the various useful and instructive publications now being constantly thrown off from the weekly periodicals of the day.

BOULLI.—This term is rather a misnomer, since *bouilli* is understood usually, like "*consomme*," to mean that portion of meat which is left from the soup and is served at the same time. However here is my *bouilli*:

To eight pounds of beef put three quarts of water, two onions, four carrots, three parsnips, three stalks (or celery leaves) of celery, quarter of a head of cabbage, (which may be left out,) three tomatoes, one pod of red pepper, parsley and allspice—beans and oche are an improvement. Cover close and boil all together for four hours—put in four potatoes and boil an hour longer—then take out the vegetables, mash them, add butter rolled in flour to thicken the gravy; return all to the pot and serve meat and gravy on the same dish. In all soups and stews, a common fault is too little water at first, and then adding to the quantity, and fast boiling in an open pot, will spoil many a good dish. Of course in this as in most other things, some judgment must be used and different tastes consulted, and many would doubtless prefer double the number of vegetables. The beef may be from the round, rump or brisket.—*Ec.*

POTATO SALAD.—Any one who has eaten potato salad at a Parisian hotel will be glad to try it after he gets home. The following is a good formula for the simple but delicious preparation. Cut ten for twelve cold boiled potatoes into slices from a quarter to half an inch thick; put into a salad bowl with four tablespoonfuls of tarragon or plain vinegar, six tablespoonfuls of best salad oil, one teaspoonful of minced parsley, and pepper and salt to taste; stir well, that all be thoroughly mixed. It should be made two or three hours before needed on the table. Anchovies, olives, or any pickles may be added to the salad, and also bits of cold beef, chicken or turkey if desired; but it is excellent without these.

SYRUP OF COFFEE.—This preparation is of great use to those who have long journeys to make. Take half a pound of the best ground coffee; put it into a saucepan, containing three pints of water, and boil it down to one pint. Cool the liquor, put it into another saucepan, well scoured, and boil it again. As it boils, add white sugar enough to give it the consistency of syrup. Take it from the fire, and when it is cold put it into a bottle and seal. When traveling, if you wish for a cup of good coffee, you have only to put two teaspoonfuls of the syrup into an ordinary coffee-pot, and fill with boiling water. Add milk to taste, if you can get it.

How the Chinese Make Tea.

Among the newspaper articles floating around the country and turning up periodically is one entitled "How different nations make tea." It commences thus: "The Chinese place the tea in a cup, pour boiling water upon it, and drink the infusion of the leaves." Now this is wholly erroneous. The Chinese method is far superior to that commonly followed in the United States and Europe for "drawing tea." They take no sugar or milk in their tea, and never boil the leaves, thereby dissipating all the delicate aroma, as we do. They have a small basket, lined with woolen felt, from an inch to two inches in thickness, and with a cover padded in the same manner. Into this a tea-pot of common China porcelain is fitted tightly. When tea is to be drawn, they put the dry leaves into the porcelain tea-pot, pour boiling water upon them, put on the lid, and close the felt-lined cover of the basket tightly down upon it. The felt retains the heat for from six to twelve hours, and at any time during the day you can pour a cup of tea, scalding hot, fresh, clear and deliciously aromatic, from the nose of the tea-kettle, which protrudes from a hole through the side of the basket. Fuel is thus economized, and the tea is infinitely better than can be produced from the same grade of leaves by any other process. This tea-pot and basket can be procured at any first-class Chinese store, and a single trial will satisfy the most skeptical that our housewives are far behind the semi-barbarians of the Orient in this branch of their business. We do a little better on coffee; but still, as a rule, we are far behind the natives of coffee-producing countries in preparing it for the table; and chocolate, the most delicate and nourishing of all the bibulous luxuries of the table, we utterly ruin.—*Call*.

THE FARMER'S OWN PUDDING.—Three pounds sifted corn meal, three-quarters of a pound finely minced beef suet, one pound dried currants, (well-washed and rubbed dry,) one-half teaspoonful of soda, (supercarbonate;) incorporate the whole, while dry, and add one and a half pints of molasses, a sufficient quantity of boiling water, stirring hard all the time until the mixture is of the consistency of common mush; stand over night in a moderately warm place; next morning tie it in a wide-mouthed bag, leaving it full space to swell; boil incessantly four or five hours (a plate placed in the bottom of the pot;) served with boiled or hard sauce, according to taste, the same as with pudding. By many, this pudding is considered even better when heated in the oven next day. The above recipe makes a quantity sufficient for twenty people.

PREPARED CORN-COBS.—A very convenient kindling wood is made in France from corn-cobs, by immersing them in a mixture of sixty parts of melted resin and forty parts of tar; after which they are taken out and allowed to dry. They are then subjected to a second operation, which consists in spreading them out on a metallic plate heated to 212° F. They are finally assorted according to size, and tied up in bundles. These are sold at the rate of three or four for a cent. The establishment in Paris for manufacturing them employs thirty workmen, and effects sales to the amount of \$40,000 annually.

A RELISH FOR BREAKFAST OR LUNCH.—Take a quarter of a pound of good, fresh cheese; cut it up into thin slices and put in a spider, turning over it a large cupful of sweet milk; add a quarter of a teaspoonful of dry mustard, a dash of pepper, a little salt, and a piece of butter as large as a butternut; stir the mixture all the time. Have at hand three Boston crackers finely powdered or rolled, and sprinkle them in gradually; as soon as they are stirred in, turn the contents into a warm dish and serve.

SWEET POTATO BALLS.—First boil the potatoes, then carefully mash the farinaceous part. Boil in the mean time a pint of milk, put in some lemon peel, a couple of small lumps of sugar, and a little salt. When the milk boils, take it off of the fire and add the potatoes, so as to form a paste, or rather a tolerably thick mush. When cool, make it into balls; cover these with crumbs of bread and yolk of egg. Fry to a nice brown color, and serve up with sugar strewed over them.

INFLUENCE OF WIVES.—It was not all a dream which made the wife of Julius Cæsar so anxious that he should not go to the State Chamber on the fatal Ides of March; had he complied with her entreaties, he might have escaped the dagger of Brutus. Disaster seemed to follow disaster in the career of Napoleon from the time he ceased to feel the balance wheel of Josephine's influence on his impetuous spirit. General Washington, when important questions were submitted to him, often has said that he should like to carry the subject to his bed-chamber before he formed his decisions; and those who knew the clear judgment and elevated purpose of Mrs. Washington thought all the better of him for wishing to make her his confidential counsellor. Indeed, the great majority of men who have acquired for themselves a great and good name, were not only married men, but happily married—both paired and matched.



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California Pears in Europe.

C. W. Reed, of Yolo county, last fall as a matter of experiment shipped several boxes of Easter Beurre pears to different points in England. Some to London, some to Glasgow and some to Liverpool. The pears were shipped late in the season and were in the snow blockade on the railroad from three to four weeks. Some went by the way of Boston, and some by the way of New York.

He has lately received an account of the experiment. The pears sent by New York arrived in perfect order, and condition; while those sent by Boston had apparently been touched by the frost and were in rather poor condition.

On the whole, the experiment is regarded by Mr. Reed as a perfect success, and proves that California pears can be laid down in any of the above named cities in a good merchantable condition. It also satisfies Mr. Reed that peculiarly the business will pay.

In confirmation of the above, B. S. Fox of San José, sent some pears to Ireland, his old home, and although it was a small shipment to friends, it proves that the fruit can be shipped and arrive in good condition. These experiments are of great value to our State. We have already a large market in the Atlantic States for our fruits, and particularly for pears, but if we can supply England with her millions of people, with our delicious pears at remunerative prices, we have a market literally beyond our ability to supply. Our fruit growers will make a note of the above facts.

A Sincere Compliment.—Messrs. DEWEY & Co.—Enclosed please find check for four dollars. I am much pleased with the RURAL PRESS. You may count on me as one of your continual subscribers so long as the PACIFIC RURAL PRESS is conducted as ably as it has been the past year.

Oak Dale, Solano county, April 1, 1872.

Daily Weather Record.

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK ENDING WEDNESDAY, APRIL 10, 1872.

Place of Observation.	Date.	Observation taken at A. M.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Wind, reduced to base of observation.	Amount of Rainfall.	Amount of Snowfall.	State of Weather.
San Francisco.	Thurs. 4.	30.02	59.64	W.	6	Fresh	1-4	Clear		
	Fri. 5.	30.00	51.55	S.	9	Fresh	1-4	Clear		
	Sat. 6.	29.99	46.69	W.	29	Brisk	1-4	Clear		
	Sun. 7.	29.97	50.71	N.W.	15	Brisk	1-4	Clear		
	Mon. 8.	29.99	48.45	Cal.	12	Brisk	1-4	Clear		
	Tu. 9.	30.01	46.92	W.	12	Brisk	1-4	Fair		
	Wed. 10.	30.26	45.63	N.W.	22	Fresh	1-4	Fair		
Portland, Or.	Thurs. 4.	30.25	41.91	Cal.	1	Light	1-4	Cloudy		
	Fri. 5.	30.13	45.84	S.	10	Fresh	1-4	Cloudy		
	Sat. 6.	30.19	41.91	Clear	4	Light	1-4	Cloudy		
	Sun. 7.	29.99	37.80	Clear	4	Light	1-4	Cloudy		
	Mon. 8.	29.99	37.80	Clear	4	Light	1-4	Cloudy		
	Tu. 9.	29.99	37.80	Clear	4	Light	1-4	Cloudy		
	Wed. 10.	29.99	37.80	Clear	4	Light	1-4	Cloudy		
San Jose, M. T.	Thurs. 4.	29.88	39.45	N.	1	Light	1-4	Fair		
	Fri. 5.	29.92	31.59	S. E.	5	Gentle	1-4	Fair		
	Sat. 6.	29.82	25.87	N.	3	Light	1-4	Light Snow		
	Sun. 7.	29.47	16.4	Cal.	1	Light	1-4	Clear		
	Mon. 8.	29.57	19.41	Cal.	1	Light	1-4	Clear		
	Tu. 9.	29.58	24.59	Cal.	1	Light	1-4	Fair		
	Wed. 10.	29.46	26.69	Cal.	1	Light	1-4	Fair		
Corvallis.	Thurs. 4.	30.08	39.63	W.	6	Fresh	1-4	Clear		
	Fri. 5.	29.99	36.61	E.	2	Light	1-4	Clear		
	Sat. 6.	29.55	35.9	N.	16	Brisk	1-4	Threat's		
	Sun. 7.	29.55	35.9	N.W.	15	Brisk	1-4	Clear		
	Mon. 8.	29.51	30.79	N.W.	3	Light	1-4	Fair		
	Tu. 9.	29.95	38.54	S.	10	Fresh	1-2	Fair		
	Wed. 10.	29.80	34.99	W.	2	Light	1-4	Cloudy		
Chayenne.	Thurs. 4.	30.13	32.88	Cal.	6	Fresh	1-4	Light Snow		
	Fri. 5.	29.82	33.69	N.W.	6	Fresh	1-4	Light Snow		
	Sat. 6.	29.55	35.61	N.W.	15	Brisk	1-4	Light Snow		
	Sun. 7.	29.73	34.61	N.W.	15	Brisk	1-4	Light Snow		
	Mon. 8.	29.67	24.87	N.	16	Brisk	1-4	Light Snow		
	Tu. 9.	29.85	22.72	W.	6	Fresh	1-4	Clear		
	Wed. 10.	29.85	22.72	W.	6	Fresh	1-4	Clear		
Denver.	Thurs. 4.	30.02	39.63	W.	6	Fresh	1-4	Clear		
	Fri. 5.	29.99	36.61	E.	2	Light	1-4	Clear		
	Sat. 6.	29.55	35.9	N.	16	Brisk	1-4	Threat's		
	Sun. 7.	29.55	35.9	N.W.	15	Brisk	1-4	Clear		
	Mon. 8.	29.51	30.79	N.W.	3	Light	1-4	Fair		
	Tu. 9.	29.95	38.54	S.	10	Fresh	1-2	Fair		
	Wed. 10.	29.80	34.99	W.	2	Light	1-4	Cloudy		
Omaha.	Thurs. 4.	30.32	39.63	N.E.	2	Light	1-4	Fair		
	Fri. 5.	30.25	38.73	E.	2	Light	1-4	Cloudy		
	Sat. 6.	29.69	46.68	E.	4	Gentle	1-4	Light Rain		
	Sun. 7.	29.55	46.02	Cal.	1	Light	1-4	Foggy		
	Mon. 8.	29.55	46.02	Cal.	1	Light	1-4	Foggy		
	Tu. 9.	30.02	49.92	N. E.	5	Gentle	1-4	Fair		
	Wed. 10.	30.07	51.79	W.	5	Gentle	1-4	Cloudy		

Temperature and Rain at Turlock.

EDS. PRESS:—Following is a summary of observations on Temperature and Rain at Turlock, Stanislaus county, for the first quarter of 1872:

1872.	Average Temperature.	Highest Temp.	Lowest Temp.	Rain, Inches.
January...	7 A.M. 40.20	2 P.M. 52.33	9 P.M. 46.15	61
February...	44.68	59.11	49.69	51
March...	46.16	63.61	50.40	53

Our entire rainfall to date for the season is now, to Jan. 1st, 8.52; for January, 2.38; for February, 2.42; for March, 1.5. Total, 14.77 inches.

Allow me, for the sake of accuracy, to acknowledge the accidental omission, in a former report, of 0.16 of an inch in January, which makes the correct amount for that month 2.38 instead of 2.22 inches.

Turlock, April 11, 1872.

J. W. A. W.

SOME of our very best dairymen tell us that they complete the whole process of butter making, churning, working, and salting, to their entire satisfaction in the Blanchard Churn, without touching their hands to the butter. We know it can be done.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., April 11.

FLOUR—We note a fair local demand with a fair inquiry for export. Sales reported embrace 5,000 bbls. Cal. extra, 3,000 do. Cal. superfine, and 2,000 Oregon extra. We quote prices as follows:

Superfine, \$5.12½@5.25; extra, in sacks, of 196 lbs. \$5.50@6.25. Standard Oregon brands, extra, may be quoted at \$5.75@6.25.

WHEAT—The market has been firm with good demand and a slight advance in prices since our last review. Sales aggregate 20,000 sacks fair to choice at \$1.75@2.00 per 100 lbs. Quotable at close at \$1.70@1.97½ per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 8d. @11s. 9d. per cental.

BARLEY—Market quiet. Sales embrace 10,000 sacks ordinary coast to choice bay, at \$1.50@1.70, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.55@1.75 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.55@1.60 for yellow and \$1.70@1.75 for white per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.30@2.40 per 100 lbs.

RYE—According to quality is quotable at \$2.20@2.25 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Selling at \$23.00 per ton from the mill.

MIDDINGS—For feed, are selling at \$30.00 per ton from mills.

OIL CAKE MEAL—Reduced to \$30 per ton from the mill.

HAY—Receipts have been free, and prices at close are \$15.00@22.00 for fair to choice per ton. **HONEY**—Is selling at 16c in the comb and 10c@12½c strained.

POTATOES—Market dull for all kinds. Best Petaluma and Tomales are selling at 45¢@50c. Humboldt, 65¢@75c. Range is from 35 to 75c.

HOPS—The range is 50¢@65c.

HIDES—During past week 2,180 Cal. dry sold at 19¢@21½, and 1,450 salted at 8¢@9½c. 2,687 Mexican dry at 18¢@20c. Stocks large.

WOOL—The market has scarcely opened, though receipts are increasing. Sales for the week amount to about 200,000 lbs. The nominal range is 35 to 55c for burry to clean. Northern about 47½@55c, and Southern 35¢@40. The Eastern markets at last dates were quiet but firm. Market is generally firm.

TALLOW—Market steady at 8½¢@9½c per lb.

SEEDS—Flax 3c.; Canary, 6¢@7c., Alfalfa, 16¢@20c; Mustard, 3¢@6c. for the different kinds.

PROVISIONS—California Bacon 13¢@14c; Oregon, 13½¢@14. Eastern do. 12¢@12½ for clear and 14¢@15 for sugar-cured Breakfast; Cal. Hams 14¢@15; California Sugar-cured Hams, 16c; Eastern do. 15¢@16c; California Smoked Beef, 13½¢@14c. per lb.

BEANS—Market continues fair. The following are jobbing rates: Pea \$3¢@3.15; small White \$2.87½¢@3.00; Small Butter \$2.70@2.80, large \$3.00@3.25; Pink \$3.50@3.75; Bayo, \$3.30@3.50; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$4.00@4.50 per 100 lbs.

NUTS—California Almonds, 8¢@10c. for hard and 18¢@25 for soft shell; Peanuts, 5¢@8c; Pecan, 25¢ per lb.; Cal. Walnuts, 14¢@15 Hickory, 12c; Brazil, 15c; Chili Walnuts, 12c; Italian Chestnuts 25¢@30c.; Eastern Chestnuts, 12¢@20c.; French Almonds, 22¢@25c.; Princess Almonds, 35¢@40c.; Cocoanuts, \$6.00@8.00 per 100.

FRESH MEAT—Market has been firm since last report. Large supplies of cattle and sheep are said to be on their way from the southern counties, which on their arrival will cause a depression in prices. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 12¢@14 per lb. do. 2d quality 9¢@11c per lb.; do. 3d do. 5¢@8c. **VEAL**—Quotable at 8¢@12½c.

MUTTON—7c. per lb.

LAMB—Scarce at 12½c.

PORK—Undressed grain-fed is quotable at 7½¢@8c. dressed, grain-fed, 10¢@11c. per lb.

POULTRY—Live Turkeys, 23¢@25c. per lb.; dressed, 25¢ per lb.; large Hens 10.50¢@11.00 Roosters, 10.50¢@11.00 per dozen; Spring Chickens, \$9.00@10.00; Ducks, tame, \$12.00@13.00 per doz.; Geese, \$15¢@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50. English Snipe, \$2.00@2.50; Small Ducks, \$1.50@2.00; Wild Geese, \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in heavy supply; it may be quoted at 20¢@25c; California firkin butter, 22¢@25c, Pickled, 18¢@20c. Eastern firkin, 20¢@27c. per lb.

CHEESE—California, 14¢@16½c, Eastern, 19¢@22½ per lb.

Eggs—California fresh, 35c. per doz.

LARD—California 12½¢@13½; Oregon in bbls. and kegs 12¢@12½c.; Eastern in cases 14¢@14½c.; do in tcs. 11½¢@12c. per lb.

FRUIT.

Tah. Oranges, M. 17	50¢@50	Bananas, bunch	2 00¢@3 00
California do.	8 00¢@35 00	Apples, eating, bx	1 50¢@2 50
Limes, M. 17	30 00	do cooking, bx	75¢@1 50
Austin Lemons, M.	—	Pears, box	1 50¢@2 00
Sicily do M. 8	00¢@12 00	Pineapples	7 00¢@9 00
Cal. do M. 25	00¢@27 50	Strawberries	15¢@20

DRYED FRUIT.

Apples, M. 17	6¢@8	Pitted, do	20¢@22
Pears, M. 17	9¢@10	Rabbits, M. 17	5¢@15
Apricots, M. 17	9¢@10	Black Flgs, M. 17	5¢@9
Plums, M. 17	5¢@6	White, do	15¢@20

VEGETABLES.

Cabbage, M. 17	2¢@3	Marf. Squash, ton	—
Garlic, M. 17	1¢@2	Asparagus, M. 17	5¢@7c
Rhubarb, M. 17	5¢@7	New Potatoes, M. 17	2½¢@3
Green Peas, M. 17	4¢@6	Tomatoes, M. 17	—
Cucumbers, M. 17	1¢@2	—	—

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonal articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is firm for most all kinds. Burlap sacks 18c.; Flour sacks 10¼¢@11c. for qrs. and 16¢@16½c. for hlfs. Standard Gunnies ate nominal at 20¢@21c.; Wool 75¢@80c.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been good, and a very active demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surface \$25; Spruce \$17@18; Redwood \$16; refuse \$12; dressed do. \$30; refuse do. \$20. We quote Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$4.25¢@4.5; Cedar \$5.00¢@5.5. Pickets: Rough, \$14; pointed, \$16; round, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange;

Puget Sound Pine—	
Rough, M. 17	20 00
Fencing and Stepping, M. 17	32 50
Fencing, second quality, M. 17	25 00
Laths, M. 17	3 00
Fencing, M. 17	3 00
Redwood—	
Rough, M. 17	20 00
Rough refuse, M. 17	15 00
Rough Pickets, pointed, M. 17	18 00
Rough Pickets, pointed, M. 17	10 00
Fancy Pickets, pointed, M. 17	30 00
Sliding, M. 17	25 00
Tongued and Grooved, surfaced, M. 17	35 00
Half-inch surfaced, M. 17	35 00
Butt-on M. 17	37 00
Batten M. 17	3 00
Shingles M. 17	3 00
Sugar Pine is retaining at \$55 for clear and \$40 for second quality, and Cedar at \$60 per M.	

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manila, 19½; Rio 19½@20; Ground Coffee in cases 30c.; Chicory, 12½.

SPICES—Allspice 14¢@15c. Cloves 16¢@17c. Cassia 35¢@36c. Nutmegs \$1.00¢@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½¢@5½, Salmon in bbls. \$6.00¢@7.00, hf do. \$3.50¢@4.00; Case Salmon, \$2¢@3 per doz for 1¢@2-bb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85c per box; Mackerel, No. 1 hf bbls, \$9.50¢@10.50; extra, \$11¢@11.50; m kits No. 1 \$2.50¢@2.75; do No. 2 \$2.00¢@2.25. Smoked Salmon, 7¢@7½c per lb.

NAILS—Quotable at \$5 50¢@7.75 for invoice lots ex ship.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 per ream.

PAINTS—Red and White Lead at 8¢@12½c; Whitening, 2½c; Chalk 2c.; Paris White 3c.; Ochre 3¢@3½c; Venetian Red 3¢@5c; Litharge 9¢@11c. per lb.

RICE—Sales of China No. 1 at 8½¢@9c. and No. 2 at 7¢@7½c per lb; Siam, quotable at 6½¢@7½c in mats; Carolina Table, 10¢@11; Hawaiian, 9¢@9½c per lb.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Yellow Coffee and Golden C. 10½¢@11c; Hawaiian 7½¢@10½c as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5¢@14; Carmen Island, in bulk, \$14¢@15; Fine Liverpool, \$23.50 per ton; Coarse, \$18¢@19.

SOAP—The prices for local brands are 5¢@10c, and Castile, 12¢@1

Can't Afford to Take it!

Occasionally a subscriber writes: "I like your paper, but cannot afford to take it." Let such take a second thought, and ask if they can afford NOT to take it? Their verdict nine times in ten will be in favor of continuing the paper, and, if requisite, cutting down some useless expense to the amount of eight cents a week, instead of denying themselves of the intellectual food that strengthens their wisdom, stimulates the higher and everlasting qualities of life, improves their farms and lightens their daily work. For every one that discontinues, however, scores of old subscribers say they CAN'T AFFORD TO STOP IT, and are sending in their renewals with words of cheer that prove our paper to be a welcome and profitable visitor to most of the homes where it has been introduced. We attribute one great reason of the success of the RURAL PRESS to the fact that it contains something of interest for EVERY MEMBER OF THE HOUSEHOLD, and some special department of information for each subscriber which is NOT SUPPLIED BY ANY OTHER PUBLICATION at home or abroad.

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The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

HUCKS & LAMBERT.

The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

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3v24-coww

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

As a Family or Light Manufacturing Machine it has no superior—uses a straight needle and shuttle, and makes the Lock Stitch (alike on both sides). Send for a circular. Agents wanted in every town.

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Surgeon and Homeopathic Physician, No. 102 Stockton street..... San Francisco, Cal. Surgical cases from the country received and treated at the Homeopathic Hospital. Letters answered promptly.

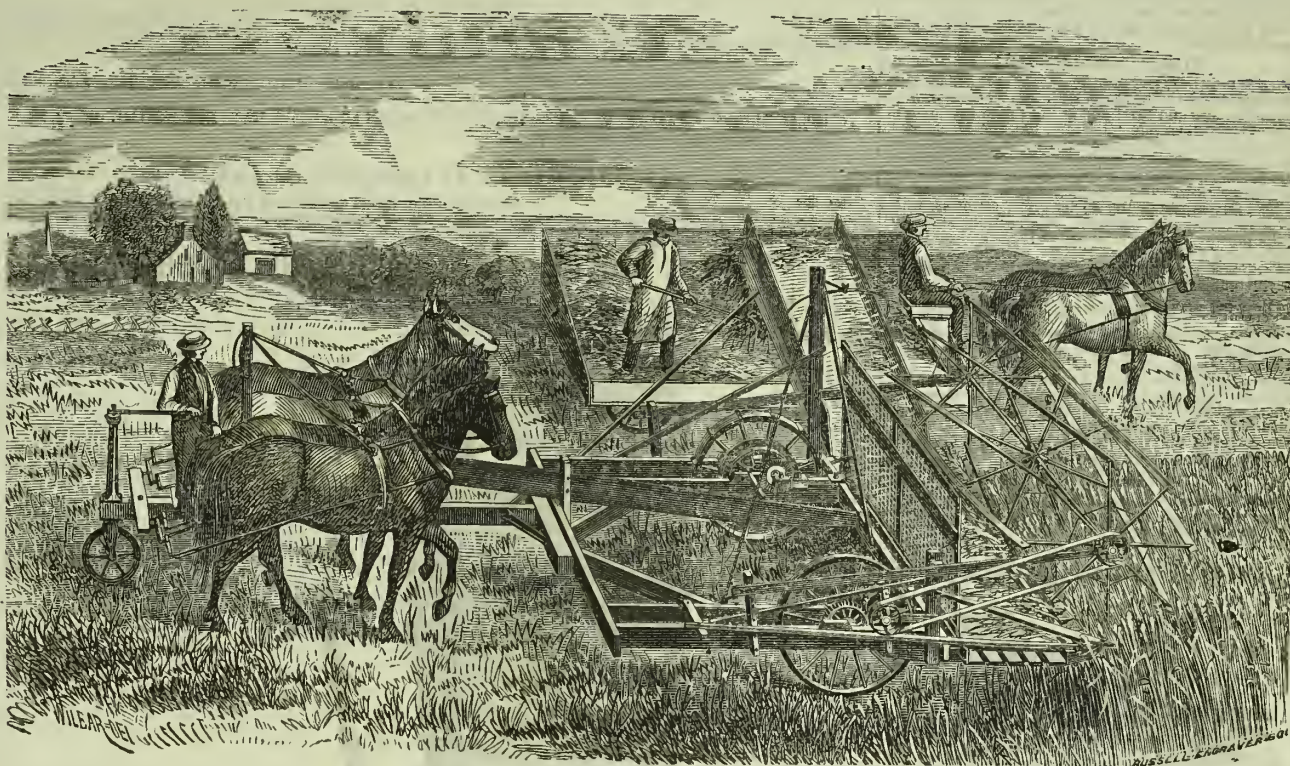
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HARVESTING MACHINES,

Hoadley's Portable Threshing Engines,



Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

These Machines MUST BE SOLD, and the supply being limited, and prices at FIRST COST, they will be disposed of at an EARLY DAY. Farmers who intend to buy Harvesting Machines for this season, would do well to ORDER NOW, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. **DON'T FAIL TO GET OUR PRICES BEFORE ORDERING.**

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OLD FARMERS' MACHINERY DEPOT, SAN FRANCISCO.

ROSE'S PATENT ADJUSTABLE PLOW FOR VINEYARDS.



It is the BEST AND MOST COMPLETE PLOW for horticultural use ever invented.

It is Light, Convenient and very Handy.

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SALE DAY—Saturday, 11 A. M. Farmers will find this institution invaluable for disposing of their fine stock.

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160 ACRES

Near Elk Grove, Sacramento County, with House, Windmills, Farming Implements, small Orchard, and Vineyard. Title perfect. 80 acres in volunteer, 80 in pasture. Price \$2,400. \$1,200 can remain at 1 per cent.

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Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain.

They are much harder than glass, and DO NOT SCRATCH.

The best quality of Crystal is found in Scotland and the Brazil, and is manufactured into lenses by the best workmen in England and France, for

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Where they can be obtained, already fitted, in frames, or may be fitted to order.

Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses.

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PREMIUM CHESTER WHITE PIGS, PURE BRED POULTRY, other desirable breeds of stock for sale. Send stamp for illustrated Catalogues.

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As follows: For three NEW yearly subscribers at \$4 each; for a club of ten yearly subscribers at \$3 each; for a club of fifteen yearly subscribers at \$2 each, with a free copy to the getter up of the club.

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The undersigned, Manufacturers of "HILL'S PATENT EUREKA GANG PLOWS," take this method of calling the attention of Agriculturists throughout the Pacific States and Territories to the merits of the above named Plows, and offer the following reasons why they are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows took the First Premium at the State Fair in Sacramento, in 1870; at the Northern District Fair in Marysville, 1870 and 1871; and at the Upper Sacramento Valley Fair, Chico, 1870 and 1871. At the Mechanics' Fair, held in San Francisco in 1871, a Silver Medal was awarded these Plows; and the State Agricultural Society, at the last Fair, offered a premium of \$40 for the best Gang Plow. The committee was composed of practical farmers from the agricultural counties, who, after a fair test and thorough competition with the leading plows of the State, awarded the premium to the Eureka Gang Plow. From this it will be seen that these celebrated plows still maintain their reputation over all competitors. Patented Sept. 7, 1869.

Champion Deep-Tilling Stubble Plow,

which took the First Premium over all competitors at the State Fair, 1871. It turns a furrow 14 inches deep and 24 inches wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at the corner of Third street and Virgin Alley, Marysville, by

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And also by most leading Agricultural Dealers in the State. All others are invited to apply at once for Circulars, prices, etc. 16v23-tf

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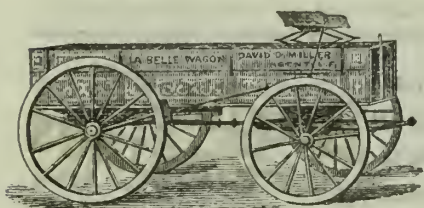


Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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THE CELEBRATED ZUFELT & CO.,

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Manufactured by FARNSWORTH, WOODWARD & CO.,
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All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate. Sold at from \$90 to \$125. Can be had only at

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715 Market street, near Third,.....San Francisco.

Also on hand all kinds of Imported Wagons from the Eastern States, including Thorough-brace or Mountain Wagons, C Spring and Side Spring Buggies—in fact all kinds for the city and interior trade. Country orders promptly filled and warranted to give satisfaction, and at as low rates as though present in person. 7v3-tf

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Agricultural Warehouse,**

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STOCKTON,

Agency and General Depot for the San Joaquin Valley for the sale of the Celebrated STUDEBAKER WAGONS and all kinds of Standard Farming Implements. 4v3-3m

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Highest prices paid for Wool.

Wool Graded, Packed and Shipped for Eastern buyers on reasonable terms.

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10v3-tf

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108 and 110 Front Street.....SAN FRANCISCO.

Importers and Dealers in

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FOR THE HARVEST OF 1872.

Buckeye Mowers,

Buckeye Mowers and Reapers,

Buckeye Mowers—new model

Haines' Genuine Headers,

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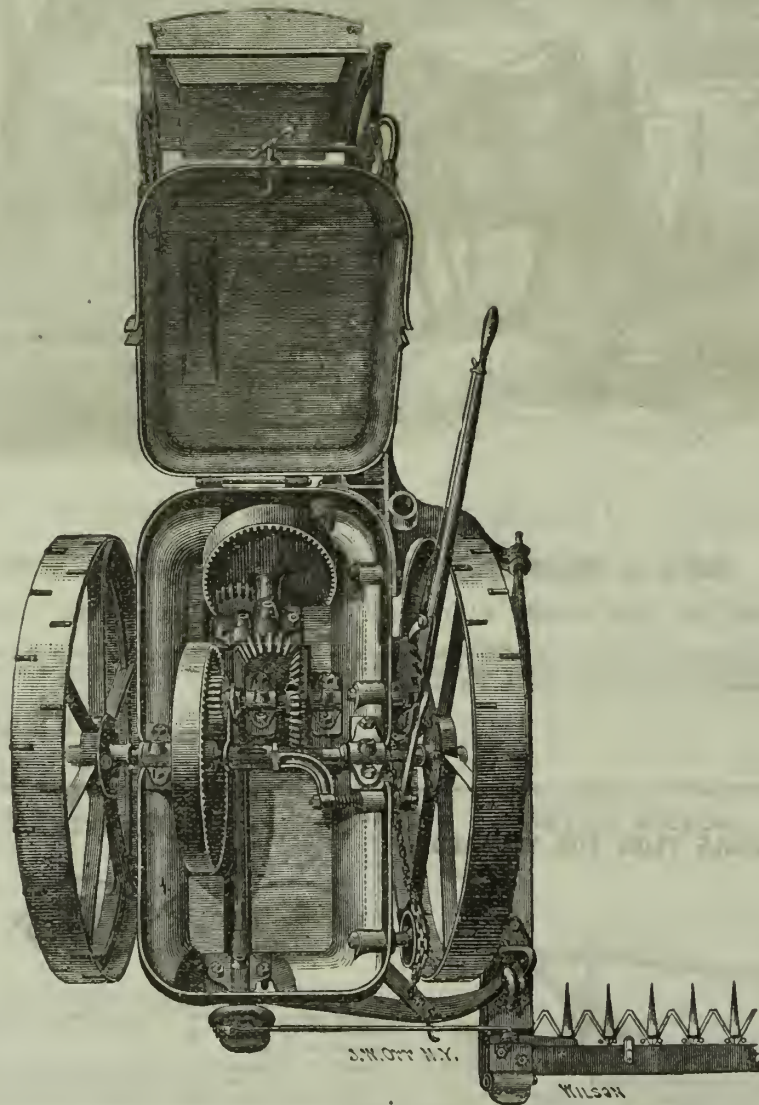
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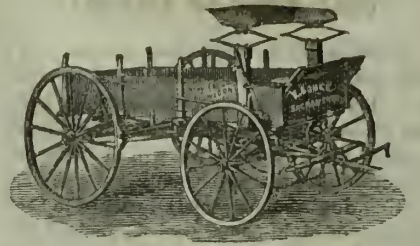
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PHOENIX MINE, Napa County, January 10th, 1872.

MESSRS. BERRY & PLACE, San Francisco—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump throws it all out of the main shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute. It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our company, as a reference, you are at liberty to do so. Very resp'tly, GEO. FELLOWS, Supt. Phoenix Quicksilver M. Co.

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MESSRS. BERRY & PLACE, San Francisco—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommendations. Yours, Etc., STARR BROS. & CAMPBELL.

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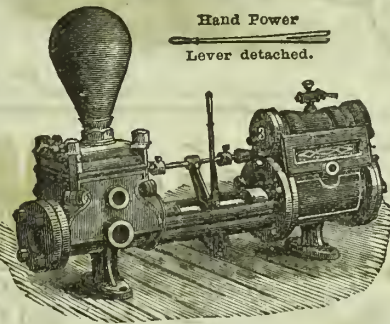
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MARYSVILLE, Cal., March 2, 1872.—Messrs. DEWEY & Co., U. S. and Foreign Patent Attorneys, San Francisco. My Patent, through your Agency, is received. Please accept my warmest thanks for the ability you displayed in obtaining it. Thirty years experience in inventing and obtaining patents has taught me the lesson that that patent agency is the cheapest which has the most ability, integrity and energy; and without flattery, permit me to say that I have tried the most prominent patent agents of the Atlantic Coast, and have never had my work so ably done as by your firm. I have carefully reviewed the specifications and claims of my patent, and am unable to find an error, nor would I add a word or line thereto; yet it is the most complicated and difficult invention to specify clearly that I ever invented; still, your lucid specifications and drawings so divest it of its apparent complication, that it may easily be understood by any one. Permit me to say, in conclusion, that the inventors of this coast have cause for just pride in the possession of so able a medium as DEWEY & Co., through which they may obtain justice at the Patent Office.

10v3-1am3t Yours truly, S. PELTON.

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Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

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Will Cure in Fifteen Minutes.

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LIGHT BRAHMAS, Seven Different Strains; DARK BRAHMAS, Imported from England and Ireland; HOUDANS, direct from France; LA FLECHE, direct from France; SILVER SPANGLED HAMBURGERS, (Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers; SILVER POLANDS, Non-Setters and Fine Layers; WHITE COCHINS, BUFF COCHINS, DUCK WINGED BANTAMS, GOLDEN SEABRIGHT BANTAMS, JAPANESE BANTAMS, HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffie-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

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China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager, California Stock and Poultry Association.

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Fine Imported Poultry,

CONSISTING OF

Dark Brahmas,

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COCHIN

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Houdans,

Guaranteed Pure, and bred direct from the finest imported stock in America.

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Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal Address W. FORD THOMAS, Custom House, SAN FRANCISCO. 1v3-3m

N. GILMORE,

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GOATS

—OF—

PURE BLOOD

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ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

N. GILMORE,

El Dorado, El Dorado county, California.

FARMERS AND DEALERS.

Reaper and Mower Sections and Knives

Complete, of all Machines in use,

Manufactured by the CALIFORNIA FILE MANUFACTURING CO., San Francisco, Cal.

Sections from \$1.75 to \$2.50 per dozen. Knives \$1.25 per running foot. 9v3-3m16p Address Cal. File Manuf'g Co., Solano st., bet. Tennessee and Minnesota sts., Potrero, S. F. P. O. Box 1478.

San Francisco Wire Works,

NO. 665 MISSION STREET,

Near Third Street.....San Francisco, C. H. GRUENHAGEN & CO.

PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, APRIL 20, 1872.

[Number 16.]

The "Champion" Mower and Reaper.

Progress made in Field Machines and Imple-
ments.

Pliny, the elder, who was born it is supposed about the year of our Lord, 23, speaks of the method of reaping grain in the low lands of Gaul. The corn was cut by an ox yoked in a reverse position, (all kinds of cereals were then called corn). Palladius, writing over three hundred years after, also speaks of an expeditious method of reaping, requiring the assistance of a single ox, during the whole harvest.

Over twelve hundred years passed before a single mention was made of reaping by power. In 1785, a reaper is spoken of in Britain, and in 1790 another is spoken of as being propelled by a horse hitched behind it, which cut and laid the grain in a swath on one side the reaper. In 1806 and 1807 further mention is made, and in 1822 up to 1830 attention became directed to this branch of husbandry. McCormick and Obed Hussey astonished North America by their inventions. The former by the general ground plan of a machine and application of a reel, and the latter by the invention of the open guard.

Every one who remembers an old McCormick or Manny, will remember the enormous motive power required to reap and mow. It was heavy work for four horses, requiring two to counteract the side draft. They were, to use a homely expression, "horse killers." From 1850, onward, attention was directed to lessening the draft, and we find Whitely, Wheeler, Ball, Miller, Aultman and others, directing their minds and mechanical ingenuity to this end, with what success the hundreds of thousands of farmers using machines can best attest.

Mr. Whiteley persevered in his efforts, and the machine of 1855, as compared with those made to-day on his patents and patterns are decidedly primitive. The production of the Whitely machine was called "The Champion," and its name and fame are as familiar as household words. The firm of Whitely, Fassler & Kelly was organized, and commenced the manufacture of this machine. From a diminutive shop they have advanced step by step, adding every year to their building and facilities for manufacturing, until now they have one of the most extensive and best arranged and best regulated manufacturing in the U. S. The machine has from time to time been improved, weak points have been made strong, complicated parts simplified, and the machine divested of everything unnecessarily heavy or cumber-

some. Every part of joint, journal or bearing, nut or bolt, in fine every piece of iron, steel, brass or wood is of the very best possible quality, and the most substantial character.

The self-raking attachment on this machine, is all that can be desired; it is easily and quickly attached by two bolts, is driven by a strong and powerful chain, dispensing with all complication and cog gearing. The rake is under perfect control of the driver, and large or small gavels can be raked at will, or the rake can be set to rake automatically, delivering a bundle at every revolution. The grain is delivered at the side of the machine, out of the way of the team. The rake is particularly adapted to raking lodged and tangled grain, and can be dropped down to pick up grain when lying close

New Use for Flax Seed.

The new use is in the manufacture of an article called linoleum, deriving the name from linum and oleum. It is likely to become of great interest to American farmers, as it seems to open a new use for flax seed, and may greatly enhance the price, so as to make flax growing largely profitable. It is said that it will be a rival of caoutchouc, or as it is commonly called, India rubber. The new article is manufactured of linseed oil by oxidizing it until it is solidified into a resinous substance, as we frequently find it when it has been exposed to the atmosphere.

It is stated that "in this state it is combined with resinous gums and other ingredients, whereupon it assumes the appearance and most

The Wool Prospect.

From present indications it looks as though the high prices that at present rule, will with difficulty be maintained. Recent letters from the East indicate enormous receipts of wool from Australia, Buenos Ayres and the Cape of Good Hope, and at present the market is well supplied. It seems that during the last week in March, seven vessels discharged in New York about 7,000 bales, and that there are now afloat from wool ports sixty vessels for the United States.

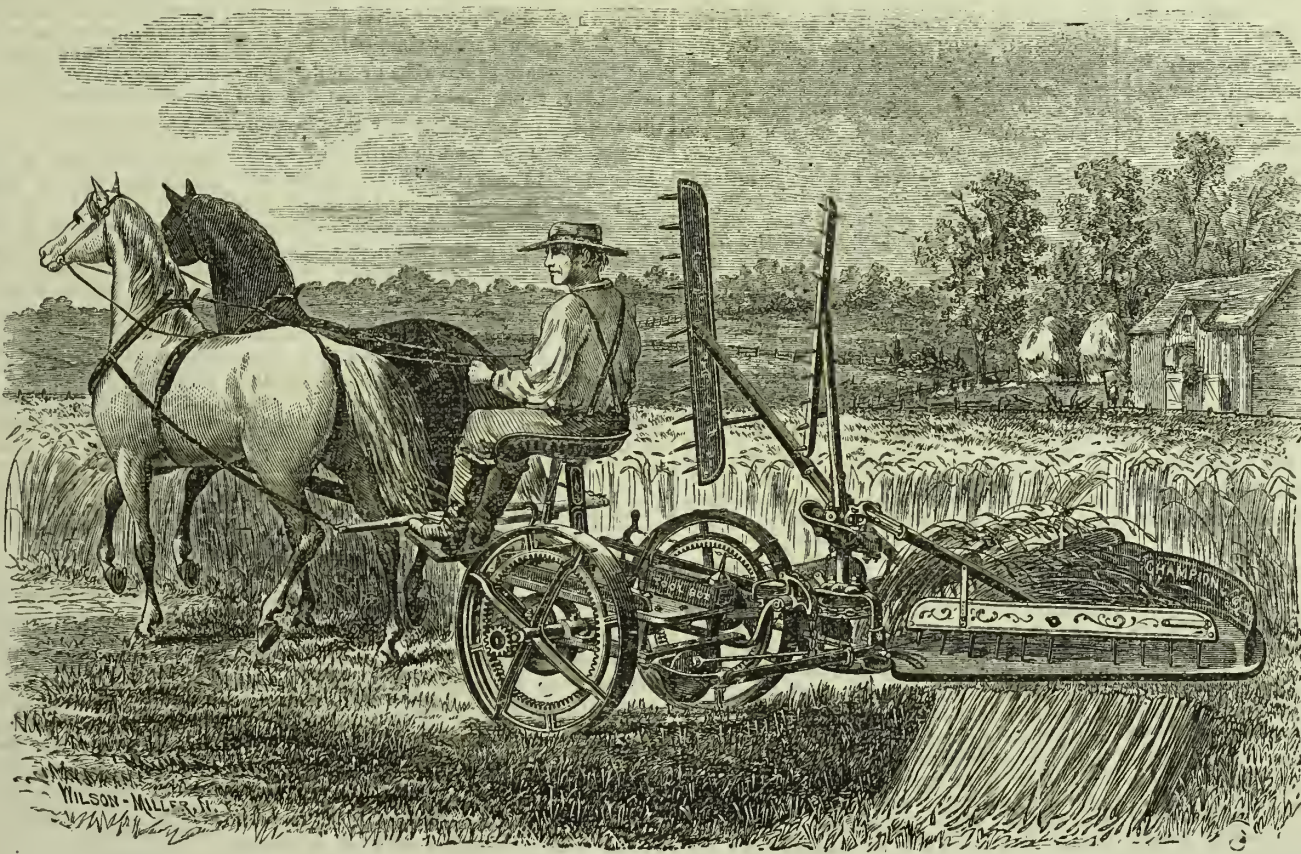
American fleece in the Boston market has declined about 7 cents per pound and Australian about 5 cents, during last week. It is thought that the market had turned its highest point and was tending downward; that dealers were growing sensitive and anxious to dispose of their stock.

From another source we learn that the scarcity of American wool had driven so many manufacturers from using it, that the call for it has fallen off, and the higher prices ruling but a short time since are not maintained. Yet with the next breath the same informant would indicate that manufacturers are making renewed inquiries for foreign wool, but refrain from purchasing more than they want for immediate use, as though they had but little hope of a decline. It would appear, therefore, that the chances for a further advance or an immediate decline are considerably mixed; and

we would admonish wool holders to keep themselves thoroughly informed of any changes likely to occur.

CIRCULATION OF SAP.—It is maintained by scientists that the sap of trees ascends in the Alburnum or sap-wood, and descends between the Alburnum and the bark, where it forms a layer of new wood—a theory that has led to many experiments. Mr. Williams applied it to the early maturation or ripening of grapes; he found by taking off one-quarter of an inch of the bark in width, that the sap was impeded in its descent, the parts above became larger, the fruits swelled and ripened early by many days.

CHANGING THE COLORS OF FLOWERS.—The Mirror of Science says that a case is known of a yellow primrose which, when planted in a rich soil, had the flowers changed to a brilliant purple. It also says that charcoal adds great brilliancy to the colors of dahlias, roses and petunias; carbonate of soda reddens pink hyacinths, and phosphate of soda changes the colors of many plants.



CHAMPION NO. 4, SELF-RAKER.

to the ground, while the machine is in motion. This Raking Attachment is very light and very strong.

The Champion deservedly stands as the "King of the Field." It is not built for mere sale, but real practical utility and durability. It is a paragon of excellence, combining strength, neatness of finish, and substantial construction. Avoiding all side draft or weight on the horses' necks, it is under the complete control of the driver, easily thrown in and out of gear, and is adapted to any light of stubble. It mows as well as reaps. It is not adapted to one country and one kind of ground, but all countries and all soils. Such has been the demand for the Champion, that two other immense factories have sprung up in Springfield, the city of its birth, all taxed to their utmost, and yet unable to supply the demand.

Baker & Hamilton, San Francisco, are sole agents for the Champion on this coast, and will, no doubt, cheerfully answer all inquiries.

THERE is no joy like that which springs from a kind act or a pleasant word.

of the properties of India rubber. Like India rubber, it can be dissolved into a cement and used in the manufacture of the material for water proof clothing. It can be used as varnish for the protection of iron or wood, or for coating ships' bottoms. It is as good as a common cement, having properties similar to the marine glue made from India rubber and shellac. It is easily vulcanized by exposure to heat, and by this means becomes as hard as the hardest wood, and capable of the finest polish. The great variety of uses to which it can be applied in this form will at once suggest themselves to the reader.

The manufacture of linoleum has thus far been made to produce floor cloth, for which it has proved itself well adapted. Combined with ground cork, it is spread on a stout canvas, the back of which is afterward water proofed with oxidized oil. The fabric is then printed by means of blocks in the ordinary way. The floor cloth thus produced is pliable, noiseless to walk upon, washes well, preserves its color, and rolls up like an ordinary carpet. It is very durable, and its component parts will not decompose by heat or exposure to the sun or air, as will India rubber.

CORRESPONDENCE.

Items from the East.

[Written for the PRESS.]

Appearance of the Crops and Weather. Condition of the Farmers, etc. Some of our Prominent Agricultural Publications; their Management, etc.

It seems that the West, say beyond the Mississippi River, is almost a separate continent from the eastern side of that mighty river, judging from the sparse information of agricultural value which we receive from your should-be-better-known part of the Union. Of course we have a satiety of political and other news, which is well enough in its way, a modicum of which is savory enough; but, with the exception of an extract, now and then, from some prominent paper on your coast, we know comparatively little of the how, why, when and where of your agricultural operations. An interchange of ideas in the agricultural press, between farmers east and west, would serve to broaden and strengthen ideas as well as enlighten. The agricultural editors at the East, some time ago, made a tour of the States to the Pacific Ocean, and, after their return, gave some account of their pleasant journeyings; but they either did not see enough or did not tell us what they saw, for their articles were limited, not in matter, but in number.

Winter wheat, as a rule, has, so far, done poorly where extra care was not exercised in putting it in, in seeding late and in fertilizing well. The fly has been rather troublesome, having severely injured many plantations, too early planting giving the fly an excellent opportunity to do so. The hay crop will not be quite up to the average for the last ten years, from the look of the sod now, owing to the very dry season here last year, although, from present appearances, the loss, pecuniarily speaking, will be fully made up by the size of our fruit crop. Quite a number of writers predict a slim crop of peaches; but not speaking for the lake shore regions, but only for the peach districts of Delaware and Maryland, I think this prediction will not be verified. Should there happen to be some shortening of the quantity, the nett returns for the extra quality, compared with last year's, will fully compensate for such shortening.

The fruit buds are commencing to swell nicely, while the fields are just beginning to put on their mantle of green verdure, giving things quite a spring like look; our summer birds, too, have put in an appearance, and are chattering merrily amongst the now leafless though budding branches of our fruit and other trees. And, unlike nature, man feels more like idling during this part of the year than during any other part, the soft, balmy air and warm, bright sun having an overruling influence upon one's constitution, after coming through the severe and lengthened winter just passed, although the imperative calls of duty compel us to cast off this insinuating syren, *spring fever*, and girdle on our working harness for the year's campaign.

The financial condition of our farmers is not of the very highest order, owing to poor crops for the last two years, and poorer prices, two things which do not work well together for the farmers' interests. The situation has opened the eyes of many to the realities of the case, and they are endeavoring to mend matters by adopting a better method of management. The patrons of husbandry are doing much good for the farming community throughout the land, and I do not think it is a whit too soon to lend the farmers some well merited assistance, for they are the supports of the land. The agricultural press has assisted, very materially, in diffusing knowledge, both theoretical and practical, to the tillers of the soil, and long may they continue to do so, improving steadily in their diffusion of agricultural information of value.

The East has a greater number of papers devoted to rural subjects and to specialties than the far West, the larger number of inhabitants and the more thickly settled country warranting this; but, having your high toned periodical and a few others at a standpoint from which to judge, I should say that the indomitable perseverance and go-aheadiveness of the inhabitants of the West are making rather more rapid strides in the matter of rural publications than we did in these parts after being rightly settled. Of the periodicals devoted to specialties the *Buffalo*, of New York, and *National*, of Chicago, live stock journals, are fitting types of the great and rapidly increasing industry which they so nobly and ably advocate. They are edited by practical men, and each have a corps of competent writers, who are well remunerated for all exertions on their behalf. The *American Stock Journal* is also a good periodical, but not gotten up on so large a scale as the others, although its special contributors, as well as its numerous readers, have no fault to find with it. In the poultry way we have the *Poultry World*, of Hartford, Conn., which, from its typographical excellence and its practical worth, together with having practical poulterers at its head and among its corps of contributors, we suppose it to be a permanent institution, notwithstanding the fact that several poultry papers before, after two or three spasmodic crows, were known to have quietly expired. The two periodicals devoted to the vineyardists' interests, at the East and elsewhere, were forced to succumb to the weight of circumstances, or rather from want of sufficient patronage. One was published at St. Louis, by Husmann, the celebrated winegrower, and the other at Hammondsport, N. Y., by Underhill, another vineyardist of established experience. In rural and family papers we have quite a large list, prominent among which are the *American Agriculturist*, N. Y., an excellent monthly publication; the *American Rural Home*, Rochester, one of the most valuable and interesting weeklies we have; *Rural New Yorker*, and *Horticulturalist*, of N. Y., *Practical Farmer*, of Philadelphia, and *Journal of the Farm*, of the same place, which paper has lately become enlarged and improved; *Massachusetts Ploughman*, Boston, one of the very best of its class, and several others. Farther west we have the *Illustrated Journal of Agriculture*, St. Louis, a really splendid monthly; the *Prairie Farmer*, of Chicago, which, Sphinx-like, was not entirely destroyed by the great fire; *Coleman's Rural World*, another good weekly from St. Louis; the *Iowa Homestead*, a good weekly from Des Moines, and a few others of merit. The south is awakening to the fact that much good can be done by the agricultural press, this awakening being manifested by the number of periodicals, rural ones, which have sprung up since the war; and of these the *Rural Carolinian*, of Charleston, a splendid practical monthly; the *Rural Alabamian*, from Mobile, a new but meritorious monthly for public favor; the *Rural Southland*, a weekly of merit from New Orleans; the *Farmer and Gardener*, of Augusta, an excellent semi-monthly, &c., are among the most practical periodicals there, and evince in both typography and contents their desire to become permanent bulwarks of southern agriculture.

Owing to the death of Jos. B. Lyman, who was formerly agricultural editor of the *Tribune*, Mr. Crandall, who filled the same position on the *World*, has been appointed to his place, and will evidently fill it with satisfaction to all concerned, from what we have known of him previously. An attaché of the *Tribune* fills his vacant place on the world, and we hope he may do so with the same success as his predecessor.

The farming clubs throughout the country are quite animated with timely discussions, and especially so is the Farmers' Club of the American Institute, where, now and then, a few items of absurdity find ready listeners, although we often get some good sound ideas from the wisecracks who farm, as a general thing, on a city lot. May they continue in their good endeavors.

I would have told you something of our natural features, having given some of the artificial ones, such as the scenery, nature of the soils, the kinds and varieties of fruits raised, and other items of interest, but the length of this article admonishes me to reserve further items until a future letter.

With the kindest wishes for the readers of your paper I subscribe myself as a true friend to rural improvement.

DAVID E. EVANS, JR.

Chesapeake City, Md., March 30th, 1872.

Notes from Santa Cruz County.

EDITORS RURAL PRESS:—The north winds which have been so universal along the Coast, have injured vegetation some here. A few days of warm weather will put the right face on everything again, for heat and this black strong soil makes everything grow at once. The potato crop is put in late here and is of course not injured. A few early patches only are hurt. Oats and barley are only being sown in many cases. Pasture is not as good as in dry winters. There has been too much water. The only fear for grain crop is that the straw will be too heavy. The pleasure seekers from the city are not here in force. Only a few advance skirmishers, who are doing a good business taking trout and gathering moss and pebbles.

The roads are in very good condition considering the winter. In each township the Supervisor and two Trustees have charge of all road and bridge work. This county has issued bonds to the amount of ten thousand dollars for each township, bearing ten per cent. interest; after five years one tenth of the principal to be paid each year, to be expended on roads and bridges. This is being very judiciously done, as each one who has charge of it has a local interest in the work and a local accountability for the manner in which the money is spent. The work on the roads is being done by Chinamen who find themselves, and receive \$1 per day.

W. H. G.

Pescadero, April 8th.

Onion Culture—Sherman Island.

EDITORS PRESS:—In raising onions upon this island we never plow over six inches deep. The first plowing is done in the fall, then again a short time before planting, taking care to have the ground in first-rate order, thoroughly harrowed, so that the sun can penetrate the soil, thus keeping it warm; sow the seed in drills 2 ft. apart, their width to suit the stand. There were 4 four acres last year upon this island of as fine onions as were ever grown, and not a single scullien in the field, and they are sound now. This, perhaps, is owing to some peculiarity of our soil. We are very busy plowing, and the water is going off the island gradually; crops will be late, but they will be good. The big levee upon this district will be begun about the first of May; 42 feet base, and 10 feet high, with a gradual slope, to be planted on the river side with three rows of willows. It will be a very strong and well built levee.

D. L. P.

Emmaton, April 10th, 1872.

Irrigation in the Malay Archipelago.

We clip the following from *Wallace's Malay Archipelago*, regarding irrigation in Lombok and at the east of Java: "Soon after passing Mataram the country began gradually to rise in gentle undulations, swelling occasionally into low hills towards the mountainous tracts. It was now that I first obtained an adequate idea of one of the most wonderful systems of cultivation in the world, equaling all that is related of Chinese industry, and as far as I know surpassing in the labor that has been bestowed upon it, any tract of equal extent in the most civilized countries of Europe.

In this remote and little known island, from which all Europeans (except a few traders at the port) are jealously excluded, many hundreds of square miles of irregular, undulating country have been so skillfully terraced and leveled, and so permeated by artificial channels that any portion can be irrigated or dried at pleasure.

According as the slope of the ground is more or less rapid; each terraced plot consists in some places of many acres, in others of only a few square yards.

We saw them in every state of cultivation, some in stubble, some being plowed, some with rice crops in various stages of growth. Here were luxuriant patches of tobacco, there cucumbers, potatoes, yams, beans, or Indian corn varied the scene.

In some places the ditches were dry, in others little streams crossed our road and were distributed over lands about to be sown or planted. The banks which bordered every terrace, rose regularly in

horizontal lines above each other, sometimes surrounding an abrupt knoll and looking a fortification, or sweeping round some deep hollow, and forming on a gigantic scale the seats of an amphitheatre.

Every brook and rivulet had been diverted from its bed, and instead of flowing along the lowest ground, were to be found crossing our road half way up an ascent, yet bordered by ancient trees and moss-grown stones, so as to have all the appearance of a natural channel, bearing testimony to the remote period at which the work had been done.

As we advanced further into the country the scenery was diversified by abrupt rocky hills, steep ravines, and by clumps of bamboos and palm trees near houses and villages, while in the distance the fine range of mountains, of which Lomboek peak, 8,000 feet high, is the culminating point, formed a fit background to a view scarcely to be surpassed either in human interest or picturesque beauty."

Beet Sugar in Europe.

Beet sugar making is found to be the most profitable branch of farming pursued in Franco, Belgium, Prussia, and indeed all the other European States where an attempt is made at its production. The farmer gets from \$4 to \$5 a ton for his beets delivered at the factory, and the pulp of his beets returned to him. This enables him to feed his animals and keep up the fertility of the soil by returning to it all the elements taken from it by the beet crop, except the unimportant carbon and water that composed the sugar, and which the atmosphere so liberally supplies.

At the present time France alone produces 300,000 tons annually of beet sugar at a cost of but a trifle over 4 cents per pound. In 1870, her revenue from sugar, and alcohol, made from sugar, amounted to over \$16,000,000. This is a larger revenue to the Government than is derived from any other one source.

Concerning the deficiency in the beet sugar production of Europe, and its probable effect on the sugar markets of the world, Mr. F. O. Licht, says in his monthly circular of February 20:

"The beet root sugar production of 1871, has exceeded that of the previous year by 73,000 tons, which excess falls principally upon Germany and France. Imports show for Europe and North America together an increase of 65,000 tons, for Europe alone on the other hand, an increase of 36,000 tons, whilst the stocks on the first of January, 1871, were for Europe and North America together 5,000 tons less, for Europe alone, 19,000 tons more; so that we have for a result, for Europe and North America a total increase of 233,000 tons, and for Europe alone that of 56,000.

At the end of December stocks in Europe and North America together were 66,000 tons, and in Europe alone even 73,000 tons smaller than they were twelve months previously, whilst the consumption of the year 1871, in Europe and North America together shows an increase of 106,000 tons, but for Europe alone only 32,000 tons. On the Continent there are for the next beet root campaign all sorts of schemes for the establishment of new manufactories, some of which are now in process of being built."

THE RURAL PRESS.—Men of all trades, occupations and professions send for it. Let but a single copy drop down among the lumbermen of Maine, and \$4 currency will be on the way to us the next day. From the orange groves of Florida, the sugar lands of Louisiana, and the cotton fields of Texas, come money and words of appreciation of the RURAL; and now from H. P., of the Johnson Co. nurseries, Spring Hill, Kansas, comes an order with money in advance for the RURAL PRESS; and all desiring to know more of California, as they think of coming here as soon as they can get away; some from under the snow, some from the ice-bound islands of Lake Erie, and yet others from the miasmatic climes of the "Sunny South;" and this is what the RURAL PRESS is doing for California.

THE President of the Northern Pacific Railroad company denies the statement that a quantity of railroad iron had arrived in New York from England for the above company, and says that it is the intention to use none but American iron on that road.

MECHANICAL PROGRESS.

Utilization of Tin-plate Clippings (Tinners' Waste).

Tin-plate consists of iron covered with pure tin, or an alloy of tin and lead. The iron is of very superior quality. The test to which it is submitted is that it must bear bending at a sharp angle without cracking, and when bent under the hammer light must not shine through any crevices along the line of flexion. The proportion of tin in tin-plate varies according to quality from 3 to 7 per cent. The value of tin in the waste is about equal to that of the iron. Several methods for treating tinnings' waste have already been devised. In 1848, Schunk proposed three processes, of which the first was to boil the clippings in sulphide of sodium, the second to boil in soda-lye, in which litharge was suspended, and the third to heat in a lye of chromate of potash and caustic-potash. In 1854, Jas. Higgin patented a mixture of hydrochloric acid, and solution of nitre, by which means it was expected that the tin would be dissolved with less action upon the iron than in hydrochloric acid alone. In 1857, Parkes proposed to put the clippings into mercury in a revolving sheet-iron drum, and thus collect the tin in an amalgam. In 1863, Paterson patented a process for mixing the clippings with fused lead so as to form solder. By heating the mass again, the alloy is fused off. Standevant and Harman proposed to melt off the tin in a current of steam and hot air into an iron cylinder below; but all these methods seemed to present some radical objection.

A perfect method for treating tin cuttings should fulfil four conditions. 1. The iron must be free from tin. 2. The tin must be obtained in a marketable form, and preferably in the metallic state. 3. Large quantities must be capable of treatment at once without much labor. 4. The process must be cheap. Iron containing 0.5 per cent. of tin, though it can be forged and welded is very cold-short. It has a fine-grained steel texture, a clear ring and great hardness, but can be useful for very few purposes. None of the old processes, except that of Higgin, thoroughly remove the iron. Schunk obtains the tin in an unsaleable form, and his process can be used on a small scale only. Mr. Ott has recently devised a method which has been applied to 300 tons of clippings in three months. The tin waste is put into a drum of thick copper, provided with holes $\frac{3}{4}$ -inch in diameter, and two inches apart. It contains 1,000 lbs. of clippings. It is then made to revolve in a bath of acid in which the tin is dissolved off. Then the drum is lifted out by a crane, and made to revolve in a water-tank, then in an alkaline bath and then in water again. In the acid bath it revolves according to the amount of free acid, from 5 to 50 minutes, and in the others 5 minutes each, making with the time spent in lifting the drum a total of 70 minutes. So, as the drum contains 1,000 lbs. of clipping, it is possible in a day of 10 hours to treat 90 cwt.

In the acid, the tin, the lead, and about 5 per cent. of iron are taken up. This solution is let off into suitable tanks. The lead is separated first, and then the tin is obtained in a state of purity, by putting in plates of zinc, when it is thrown down either in a crystalline or a spongy form. It is well washed, fused and sold as block tin. The zinc remains in solution, one part of zinc being required to precipitate two of tin. The mixed solution of zinc and iron may be used for preserving wood, or for making coarse colors for house-painting. The iron plates are sold to the iron works.

Dorn proposes to pile up tin clippings in chambers of a suitable material, and to dissolve off the tin by means of a gaseous mixture. On this process, it may be remarked, that though the bichloride of tin is extensively used by color-makers, dyers and calico-printers, it is necessary that it should be perfectly free from iron.

The Production of Bright or Lustrous Colors on Metals.

The active chemist, C. Puscher, of Nuremberg, proposes a new method of coloring metals which can be executed quickly and cheaply. He produces on these surfaces a coating of metallic sulphides analogous to those found in nature, as for example, sulphide of lead. These very stable sulphur combinations, as is well known, are not affected by ordinary agents. According to Puscher's method, in five minutes there may be imparted to thousands of brass articles a color varying from a beautiful gold to a copper red, then carmine red, then dark, then aniline blue, to a blue white, like sulphide of lead, and at last a red-dish white, according to the length of time they remain in the solution used. The colors possess the most beautiful lustre, and, if the articles to be colored have been previously thoroughly cleaned by means of acids and alkalis, they adhere so firmly that they may be operated upon by the polishing steel. To prepare the solution, dissolve $1\frac{1}{2}$ ounces of hyposulphite of soda in one pound of water, and add $1\frac{1}{2}$ ounces acetate of lead dissolved in half a pound of water. When this clear solution is heated to 190° to 210° F., it decomposes slowly and precipitates sulphide of lead in

brown flocks. If metal is now present, a part of the sulphide of lead is deposited thereon, and according to the thickness of the deposited sulphide of lead the above mentioned beautiful lustre colors are produced. To produce an even coloring, the articles to be colored must be evenly heated. Iron treated with this solution takes a steel blue color; zinc, a brown color; in the case of copper objects, the first gold color does not appear; lead and zinc are entirely indifferent. If, instead of the acetate of lead, an equal weight of sulphuric acid is added to the hyposulphite of soda and the process carried on as before, the brass is covered with a very beautiful red, which is followed by a green, which is not in the first mentioned scale of colors, and changes finally to a splendid brown with green and red iris glitter; this last is a very durable coating, and may find special attention in manufactures. Very beautiful marbled designs can be produced by using a lead solution thickened with gum-tragacanth on brass which has been heated to 210° F., and is afterward treated by the usual solution of sulphide of lead. The solution may be used several times, and is not liable to spontaneous change.—*Technologist*.

Glass Bearings.

The use of glass bearings for the wearing surfaces of cross-heads, pistons, and other working parts of machinery which has recently been introduced into some parts of the Eastern States is steadily extending and gaining favor. These bearings consist of pieces of glass inserted into the bearing surfaces as hereinafter described. In the slides of the cross-head they are simply imbedded in holes drilled or cast to receive them, and in piston rings they are inserted in grooves turned in the rings. The following directions are given by the manufacturer for putting in such bearings:

"Drill the holes full one-fourth of an inch larger in diameter than the glass is, and at least one-sixteenth deeper than the glass is thick. The holes should be chipped under with a center chisel in several places in order to hold the babbitt well. Then take a parallel piece of iron large enough to cover the hole, and perfectly smooth on one surface, place a little oil on the smooth surface and press the piece of glass to it. By this means you exclude the air, and the glass and iron will stick together firmly; this is done in order to hold the glass up from the bottom of the hole, and thus allow the babbitt to run under as well as around it, forming a perfect bed for the glass to rest on. Place the piece of iron with the glass fast to it over the hole in such a manner as to keep the glass in the center, and also leave a small space uncovered through which to pour the babbitt. The glass should be above the surface of the working part, in order to take the full bearing. Place at least one thickness of writing paper between the parallel piece and the other surface; clamp the parallel piece to the gibb or other part, for if not clamped the glass is likely to rise too high above the surface while the babbitt is being poured. Caulk the babbitt in several places with a blunt center-punch between the glass and iron, then scrape it down to the surface. Bearings put in locomotive cross-heads should not be more than flush with the surface.

To insert the bearings in cylinder packing-rings, eccentrics, etc., a groove should be cast or turned in the center of sufficient depth and width to allow the babbitt to run under and around the glass; the groove should be turned under and also chipped rough on the sides. Then bend a strip of sheet-iron to the exact radius, and make the proper surface smooth, then stick five or six pieces of glass to the smooth surface by means of putty or any other substance that will stick well. Then clamp the sheet iron with the glass fast to it to the ring or other part; close up one end with putty, and pour the babbitt in the other end. When the glass is all inserted, take oil and emery with a file and grind the glass down to the surface, making sure that not one of the glasses are above the surface when the ring is finished.

In parts where there is not sufficient thickness of material to allow the babbitt metal to be run under the glass, one thickness of muslin may be used as a bed for the glass to rest upon."

These bearings are now very extensively used in locomotives and stationary engines, and the manufacturer is furnishing them to all parts of the country and for all kinds of steam-machinery. Most persons, we believe, would be surprised to find how much rough usage a piece of glass will bear if properly embedded in a soft metal. If they are well fitted they will stand a considerable number of quite severe blows from a hammer without being fractured.

The manager of a furnace in Prussia, finding himself without fuel, resolved to keep the furnace alive as best he might. He began at once to reduce the charge of iron ore to one-half, keeping all the while the usual charge of coke, and after the furnace was thus filled, the blast was cut off, and all apertures were closed as air-tight as possible, and watched carefully so for more than ninety days anxiety. A regular supply of fuel being once more secured, after that time, the tuyers, hearth, and top were reopened, the hot blast let on, and twelve hours later the first clean cinder made its appearance, flowing over the wall-stone, to the great delight of all concerned.

A PRUSSIAN engineer has, it is said, invented a machine which will manufacture ice without chemicals, merely by compression and explosion of air.

SCIENTIFIC PROGRESS.

THE SPECTROSCOPE ON THE NEBULAR HYPOTHESIS.—The existence of immense nebulous masses, from which Laplace supposed the solar system to have been derived, was thought to have been proved baseless by the increased power of modern telescopes, which have resolved into clusters of stars many objects supposed to have been nebulae. But since the spectroscopic has been so improved as to be practically employed for determining the character of such distant bodies, the nebulous theory is again coming into favor, if indeed it may not now be considered as fully established on a stronger foundation than ever before.

Prof. Kirkwood has made extended observations in this direction, in which the evidence in favor of the hypothesis is decidedly cumulative. Even progressive changes in the physical condition of some of the nebulae have been quite clearly indicated. In some parts of certain nebulae nuclei have been established—the mass of gaseous matter evidently passing from its attenuated form into a semi-solid state. The spectra obtained prove this fact beyond the possibility of doubt. This class of spectra reveals a constitution similar to that recently observed in certain comets belonging to our own system.

VELOCITY OF METEORIC STONES.—It has been quite satisfactorily proven that meteors, before they meet with the retarding influence of the earth's atmosphere, often move with a velocity several thousand times that of a cannon ball at the instant of its discharge. If a cannon ball could be made to move with such velocity it would almost instantly be destroyed, and disappear in a streak of flame. It is probable, however, that the impetus necessary to impart such a velocity would at once reduce to powder any brittle substance like cast iron or stone. Meteors which enter the atmosphere at any considerable angle from a direct line toward its center are deflected from their course and soon move from its influence. Such is no doubt the case with many which are seen to flit across the sky; while many, if not most of those which enter in a direct line, are dissipated into impalpable gasses before they have passed half the distance from the solar bounds of the atmosphere to the earth, or reach the earth in a state of impalpable dust.

ERUPTION OF METEORITES FROM THE SUN.—The theory of a solar origin for meteorites, however strange and startling it may at first sight be, can by no means be condemned as altogether illusory. Advocated by Mr. Proctor in *Fraser's Magazine*, for April, 1871, much evidence in its favor has been supplied by the recent solar researches of Secchi, Young and others. In brief, it is, that the solar prominences result from the shooting forth of liquid or solid masses or streams of matter, and that meteoric masses, or at least some meteorites, may have originated in this manner, being propelled from beneath the surface of the sun.

Mr. Runyard, in a recent communication to the Royal Astronomical Society, discussing the nature and origin of the upheaval of eruption prominences, states as his conclusion that the observed phenomena, and all other considerations, go far to render it probable that meteors are formed from the metallic vapors hurled from the sun or other stars, or that solid masses may be so hurled, in eruption prominences.

Mr. F. A. Fleming also remarks of this theory, that, offering as it does a possible account of the genesis of prominences and meteorites, it appears also to contain the germ of another hypothesis, which he develops, respecting the cause of the connection between solar eruption and terrestrial magnetism.

THE TRANSIT OF VENUS.—Professor Henry and other scientific men connected with the Smithsonian Institute and the Naval Observatory have united in an interesting memorial to Congress urging the appropriation of \$150,000 to make extensive and thorough preparation for observing the transit of Venus across the sun, which will take place in 1874, which is looked upon as the most important astronomical event that has occurred for many years. The last transit was in 1792, and excited so much interest in the scientific world that several European Governments made liberal appropriations to enable their astronomers to take observations. The transit of 1874 will not be visible in this country, and will be best seen from the islands of the South Pacific and Indian oceans. It is proposed to send naval expeditions to those points, accompanied by scientific parties. The Governments of many of the countries of Europe have already taken steps to this end, and there is little doubt that Congress will enable the astronomers of this country to have the same advantages as their foreign brethren.

THE proposed tunnel under Mt. St. Gothard will be about twice as long as the Mt. Conis tunnel, and it will pass under peaks varying in height from 8,750 feet to 10,000. The principal advantage anticipated from the work is an increase in the facilities for trade and travel between Europe and Asia, by way of Italy.

PASSIVITY OF IRON, CADMIUM, AND TIN.—Many years ago Faraday pointed out that when iron was plunged into nitric acid sufficiently concentrated, it became possessed of a surface condition which rendered it indifferent to the strongest acid; and which enabled it to form a voltaic circuit with ordinary iron. That such iron has really been decidedly altered in character is also evinced by the fact that it refuses to reduce copper from solution of its salts. Dr. Schön has observed that if cadmium is wrapped round with some platinum wire, it may be placed in strong nitric acid without being in the least degree acted upon; but if the wire is removed the cadmium is instantly attacked, thus showing that the passivity of the cadmium is entirely due to its contact with the platinum. The author also states that when tin is treated in a similar manner it exhibits like phenomena.

DANGEROUS GAS PIPES.—The *Journal de l'Eclairage* notices an accident which gives new proof of the danger attending the use of copper gas pipes. In April last, a workman having with a triangular file cut almost half through a gas-pipe of red copper $\frac{3}{4}$ inch interior diameter, which supplied the Liège station, was removing the tool, when an explosion took place, with a noise like the report of a rifle, and the workman was much burnt. A similar accident happened subsequently, but with less intensity, and the workman, who was not injured, did not report the circumstance. Some gas-pipes having been taken down, they were found covered with a blackish coating, and they showed evident signs of corrosion from ammoniacal condensation. The black matter was analyzed, and was found to consist of acetylide of copper, which explodes between 203° deg. and 248° deg., producing water, copper, carbon, carbonic acid, and traces of carbonic oxide.

THE ESPY RAIN THEORY.—It is stated that notwithstanding the continued and wide-spread fires which prevailed for four or five weeks in Northern Illinois, last summer, devastating forests over a large area, not a drop of rain fell, as might have been expected, if the Espy rain theory is correct. The rain only came with a change of wind to northward, and several days after the worst burnings were over with.

On the contrary, heavy rains followed immediately after the great fire in Chicago. Possibly the occurrence of rain in the latter instance was due to the greater intensity and concentration of heat.

UNEXTINGUISHABLE SIGNAL LAMP.—Some experiments have been made in Tamise, with the unextinguishable self-lighting signal lamp of Holmes, and they promise a great success. The lamp is a cylinder of tin, with a conical top; the cylinder is filled with phosphuret of calcium, prepared by the inventor. When the lamp is plunged in water, this liquid, entering the cylinder, effects the decomposition of the phosphuret; phosphuretted hydrogen is disengaged in large quantity with vapor of phosphorus, takes fire spontaneously, and burns with a brilliant flame.—*Les Mondes*.

CLEANSING WOOL FROM BURRS.—The wool is soaked in a bath containing 2 lbs. alum to every 10 lbs. of wool and to this sulphuric acid added until the bath marks 6 deg. B. In this bath the wool should remain until its appearance shows that the bath has had its effect, when it must be taken out and thoroughly drained. It is then subjected to the action of a brushing machine which removes all the burrs.

THE GREENLAND METEORITES.—Professor Nordenskiöld states that the masses of meteoric iron brought from Greenland by the recent Swedish expedition seem to have formed the principle masses of enormous meteoric fall of miocene date, extending over an area of some two hundred square miles. The iron appears to be free from silicates. Professor Ramsey thinks the masses may be of telluric origin.

AN ACOUSTIC EXPERIMENT.—Let a wide glass tube, open at both ends, be taken, and in this a piece of fine wire gauze be pushed up some little distance. If the gauze is now heated to redness over an ordinary Bunsen burner, and then removed, it will shortly emit a shrill note, lasting from 5—10 seconds. The experiment we believe will be new to most of our readers, and has the merit of always going off.

AN EXPERIMENTAL GAS WORKS.—The German Society of Gas and Water Experts have under consideration a plan for establishing an experimental gas works, for the purpose of deciding various questions which may arise in the details of their profession, by actual experiment. The proposed plan, if adopted, will be upon a large scale, so as to reproduce, as far as possible, all the conditions met with in practice.

LARGE SUN SPOT.—Professor S. P. Langley of the Alleghany Observatory, has computed the area of one of the spots lately visible near the center of the sun's disc, from careful measurement, and found it exceeded 2,300,000 square miles, which is more than ten times the entire area of the earth.

REMOVAL of spots made by sugar, from goods with delicate colors and much sizing. The spot should be rubbed with a damp cloth, and then with a piece of fresh bread, which will remove the saccharine matter without affecting the color.

THE principal supply of bismuth is derived from Bolivia, but it has recently been discovered in Australia.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JANUARY 30, 1872.

PAPER-FILER.—Jeremiah W. Ford, S. F., Cal.; antedated Dec. 20, 1871.
BUCKLE.—Nathaniel D. Fowler, Valley Ford, Cal.
RAILWAY SWITCH.—William H. Masterman and Andrew Jackson, Stockton, Cal.
DEVICE FOR STEADING WAGON-POLES.—Reuben Anstett, S. F., Cal.
BROADCAST SOWER.—Jacob Price, San Leandro, Baptist Johnson, Irwin J. Truman and Robert M. Hamilton, S. F., assignors to Livingston L. Baker and Robert M. Hamilton, S. F., Cal.

FOR THE WEEK ENDING JANUARY 10TH.

CARRIAGE WHEEL.—Charles Palmer, Hamilton, Nev.

FOR THE WEEK ENDING JANUARY 30TH.

ROTARY PUMP.—Nathaniel P. Sheldon, S. F., Cal.
CURING LEAF TOBACCO.—James D. Culp, Gilroy, Cal.
ARTIFICIAL TEETH.—Charles H. Mack, Portland, Or.

FOR THE WEEK ENDING FEBRUARY 6TH.

GRAIN-SEPARATOR.—Joseph Esse, Redwood City, Cal.
HORSE-POWER.—Samuel Pelton, Marysville, Cal.
APPARATUS FOR EXHAUSTING AIR FROM PRESERVE-CANS.—David N. Phelps, San Leandro, Cal.
BUNG.—Daniel B. Riskey, S. F., Cal.
MANUFACTURE OF ALCOHOLIC SPIRITS.—Ianthus J. Rolfe and Josiah Rogers, Nevada City, Cal.
DIRT-WASHING MACHINE.—Catharine Woodruff, Antioch, Cal.

FOR THE WEEK ENDING FEBRUARY 13TH.

HORSE-POWER.—Thomas C. Churchman, Sacramento, Cal.

FOR THE WEEK ENDING FEBRUARY 20TH.

GOPHER-TRAP.—John Bowdler, Santa Cruz, Cal.
MATERIAL FOR FILLING MATTHESSES, MAKING PAPER, ETC.—Francis C. Cone, S. F., Cal.
AMALGAMATOR.—George C. Langtry and George Emmett, Gold Hill, Nev.

FOR THE WEEK ENDING FEBRUARY 27TH.

WOOD PAVEMENT.—Henry E. Perry, S. F., Cal.

FOR THE WEEK ENDING MARCH 5TH.

GRAIN-SEPARATOR.—James C. Bowden, Farmington, Cal.

ENGLISH-ROPE WAY.—David R. Smith, S. F., Cal., assignor to Andrew S. Hallidie, same place.

FOR THE WEEK ENDING MARCH 12TH.

GANG-PLOW.—Samuel D. Bowen and Americas M. Abbott, Stockton, Cal.

BRICK-KILN.—Francis Felix Bondrye, S. F., Cal.
PELUMINATION LOCK.—William C. Busse, S. F., Cal.
MACHINE FOR PAINTING WINE-CLOTH.—Samuel Graves, S. F., Cal.

GANG-PLOW.—George W. Haines, Maine Prairie, Cal.; antedated March 7, 1872.

FRICTION ENGINE.—Wallace Hainscom, S. F. Cal.
EXTENSION SHELF OR BRACKET.—Anthony Rosenfield, S. F., Cal.

QUARTZ-MILL.—William C. Stiles, Nevada City, Cal.

FOR THE WEEK ENDING MARCH 19TH.

MEDICAL COMPOUND OR RHEUMATIC LINIMENT.—John M. Cantrell, Polk county, Or.

WHEEL FOR VEHICLES.—George R. Duval, Salem, Or.
SUBMARINE AND OTHER WALLS.—William H. Foye, S. F., Cal.

HARROW.—Oradon J. Leabo, Forest Grove, Or.
APPARATUS FOR LIGHTING AND EXTINGUISHING GAS BY ELECTRICITY.—John Vassant, S. F., Cal.

A LAL-TRAP.—James William Fishback How, Can youville, Or.
SPICE-BOTTLE.—Joseph L. Likins, Vallejo, Cal.; antedated March 14, 1872.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible by telegraph or otherwise at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

SCHOOL LANDS.—The Surveyor General has forwarded to the different Boards of Supervisors of the State a communication calling attention to an Act in relation to school lands, approved April 4, 1870, which provides: "The Supervisors of the several counties of this State are hereby required to report to the Surveyor General of the State, within six months after the passage of this Act, all school lands within their respective counties heretofore sold under any law of this State, except those sold under Act of March 20, 1868; and all lands thus returned, whether sold or unsold, and not paid for, shall be subject to the provisions of said Act of March 28, 1868, provided that delinquent purchasers of any such lands shall have six months after the passage of this Act to make full payment for the lands purchased, and failing to do so shall be proceeded against as provided for in said Act of March 28, 1868."

AGRICULTURAL VALUES.—The total value of the agricultural productions of California comprise 45 per cent. of her total industrial wheat products; the products of her mines—gold, silver, copper, quick-silver, coal, etc., reaches only about 16 per cent; leaving but 40 per cent for all her other industrial products. The agricultural yield of California for the year 1872 will be largely in excess of all other products combined.

CALIFORNIA WHEAT EXPORTS.—The total export of wheat and flour for the United States, East of the Rocky Mountains, reached an aggregate value of about \$68,000,000 in 1870. That value will not be much increased for the coming year, while California alone will be able to send away about 600,000 tons at a value somewhat exceeding \$20,000,000.

San Joaquin Farmers' Club.

The San Joaquin Farmers' Club met at 1 o'clock Saturday afternoon, Dr. Holden, President in the Chair. H. M. Fanning, on the part of the Committee appointed to examine into and report on the feasibility of importing grain sacks, stated that the committee were unable to report satisfactorily. They were granted further time. The Committee on Insurance of Growing Crops reported that they had corresponded with ten or twelve companies, four of whom had refused to enter into any arrangements of that kind, the Etua Company had submitted terms, and no reply had been received from the remainder. The Committee asked further time to report and the request was granted. The next business in order was the discussion of the question of the day, viz: "Farm Machinery," and Mr. Overhiser inquired if any member present had ever used the Vibrator thresher. Mr. Hitchcock gave, at some length, his experience in the use of said machine, and stated that in his opinion it was the best for use in this part of the country. He had used one during two seasons, and said that he had thrashed stacks so damp that the grain was soft. The straw was full of weeds. The Vibrator had operated better in such grain than any machine he had ever seen. He used a thirty-two-inch cylinder and threshed fifteen hundred bushels of barley in one day, and twelve hundred bushels of wheat in the same length of time with ease. The Vibrator is manufactured by Nichols & Shepard, Battle Creek, Michigan. Mr. Smyth stated that season before last he had a light, chaffy crop of barley, which was thrashed by a Vibrator, and he thought the grain was better saved than it could have been by any other machine. Mr. Wright said he had examined the Vibrator thoroughly, but had not used it himself, and was anxious to find a better machine than the one he was using. He did not think the Vibrator possessed any advantage over the other standard machines. He was satisfied that it would not save any more grain or labor, except that it ran a little lighter. He was certain there were more bearings in the Vibrator than in the Hall and Pitt's machines, probably two to one. In speaking of cleaning grain at the threshing, he thought that farmers would have to come to it, as hauling the grain to market, having it cleaned at the mills, and hauling back the refuse, would not pay. Mr. Walthall asked if cleaning could be done as cheaply at the machine on the field as it could by a large and more perfect machine in the city driven by cheap power? Mr. Wright replied that he thought it could be done at the machine on the field for half the price, say about one dollar per ton, and that he intended to attach a cleaner to his own machine this season—one that would clean about fifteen hundred bushels per day. Mr. Hitchcock coincided with the views and opinions expressed by Mr. Wright, and suggested that there might be some danger in getting weevil introduced into the grain in a large establishment where everybody's wheat was cleaned. He also stated that the refuse was wanted on every farm, and cleaning grain at home would save freight two ways on such refuse. Mr. Cole endorsed the system of cleaning at the machine in the field, and thought that the saving resulting therefrom would not be less than one hundred per cent. in the cost of cleaning. Mr. Carpenter desired to know if any person present had seen the cleaning machine in actual use in connection with a threshing machine? He thought the dust might interfere with the cleaning process. Mr. Wright thought the cleaner could be placed to the windward so as not to be interfered with by dust at all.

One gentleman desired to know what mowing machines were used by members of the Club, and what were the results? Mr. Overhiser stated that the Clipper had been found by him to be the best for light draught and clean work; that the guards of the Clipper were short, and that, with that machine, he had never experienced any trouble from clogging. Mr. Carpenter desired to know if the Clipper was not bad for breaking knives? Mr. Overhiser replied that he had used the Clipper for several years and never had any knives broken. Mr. Ashley said he had used a great many machines that were lighter than the Buckeye, but had never found any more strong and durable. He had seen the Excelsior, a new machine, thought well of it, but had not tried it. Mr. Carpenter said the objection to the Buckeye was that it broke sickles badly. Mr. Ashley replied that, if rightly handled and the blade not allowed to wear into the bar, it would not break sickles any worse than any other machine. Mr. Overhiser said he had examined the Excelsior machine thoroughly, had not used it, but found the same objection that he had to Ball's Ohio machine, that is, that it has the same cutter-bar, and, on account of the length of the guards, would not penetrate heavy clover, and he thought it would clog. Mr. Smyth said he had used Ball's machine for several years and had always found it cut clover well. Mr. Wright stated that the Wood's was a light running machine, and he thought it better than Ball's. He considered the great object in all mowing machines was to get as little resistance as possible on the guards.

In connection with cleaning wheat, Mr. Peters was invited to give his views upon preparing the grain for market. This gentleman spoke at some length, and advised farmers to clean their grain at the machines on their ranches, as, in his opinion, it could be done there at one-half the cost for which the work could be accomplished in Stockton. He said that it injured new sacks to cut them open,

empty out the grain and re-sack it, thus virtually making the sacks second-handed. He advised farmers particularly to keep different qualities of grain separate, which could be much more easily done on the farm than it would be possible to do in a large cleaning establishment. He said that a small lot of inferior grain always injured the sale of a large lot of good wheat when mixed; and even different kinds of good wheat being mixed would injure the sale of the entire lot. He spoke quite at length, and his suggestions and remarks were well received. It was proposed to levy a monthly assessment to defray the expenses of the Club, but the proposition was not agreed to, as it was generally conceded that the annual fee of one dollar was enough for the present. The question selected for discussion at the meeting to be held on Saturday, 13th inst., was "Farm Labor," and the following named gentlemen were appointed a Committee to report to the Club the best method of obtaining farm labor: Wm. L. Overhiser, James Smyth, H. E. Wright, John R. W. Hitchcock, George West and M. Walthall. On motion, the Club adjourned.

Santa Clara Farmers' Club.

The Farmers' Club met April 13, and had an interesting debate on the subject of taxation.

Mr. J. F. Holloway spoke of the present excessive taxation as the outgrowth of the recent laws, and denounced it in the severest terms. He said the farmers who lay the foundation of industry, have to bear the greatest burdens. He was opposed to the inequality of taxation. He thought the new law an attempt at equalization, and would not make the burden lighter. He was opposed to pay high salaries to officials, as though the pay made them more respectable. Labor should be the true standard of nobility—not the wages. He said, in regard to officials, that when any man usurps more than a due proportion of wages—it is robbery. In proportion as we elevate a man above the masses, we become degraded.

Mr. Erskson was in favor of inviting Mr. F. E. Spencer to address the Club on the new taxation law.

Mr. Mason thought that the Assessor would be able to throw more light on the subject.

Ben. Casey said he could speak calmly as one not near any particular election. He said appropriations was the cause of excessive taxation. Agricultural appropriations were of no benefit to the farmers, and only served, like others, to unnecessarily increase his taxes. He thought Normal Schools should be more diffusive, then there would be no ring of teachers, nor a large appropriation. He spoke of the tax on shade trees, which was an imposition and would prevent trees from being planted.

Mr. Cadwell spoke of the many features of the subject. Taxation may be and is carried to oppression, and that was a condition leading to oppression, when officials looked with disdain upon the farmer. Labor should have a strong voice in controlling taxation. Subsidies and appropriations cause excessive taxation.

Mr. Erskson spoke in favor of the Normal School.

Mr. Ben. Casey wanted to see a Normal School in every district, so that the pupils could board at home.

Mr. Holloway thought education should be diffused, so that every one could have an equal chance and privilege. Equal taxation was all right, but the amount should be seriously considered.

O. Dubois thought the Normal School was diffusive, as its pupils are scattered over the State as teachers every year.

Jesse Hobson thought that liquor was the cause of one-half of the present taxation. He read statistics in support of his assertion, and was followed by Chipman in the same strain.

Hobson said that extravagant appropriations swelled taxation—citing the Normal School as an instance. We have got to work and fight this corruption before taxation can be reduced. He said that the farmers instead of coming to town and loafing around saloons, should join the Club and work for the cause of justice and right.

Santa Cruz Farmers' Club.

[Reported for the Press by Roger Conant.]

The Club met on Saturday afternoon, April 6th, at 1 o'clock P. M.

The Secretary read letters from Prof. W. B. Ewer of the PACIFIC RURAL PRESS, and Prof. E. S. Carr of the State University. On motion, the committee on the general interests of the Club were instructed to invite these gentlemen to lecture before the Club.

The subject of the cattle disease which raged in this vicinity in September last, coming before the Club, Mr. Conant stated that he had received a letter from Hon. Frederick Watts, Commissioner of Agriculture, inclosing the report of R. McClure of Philadelphia, the foremost Veterinary surgeon in the United States. Dr. Anderson read the report which is as follows:

925 FILBERT ST., PHILA.,
MARCH 15TH, 1872.

HON. F. WATT, Com. Agriculture. Sir:—Yours of yesterday concerning a disease of cattle is received. The disease as is described in the accompanying report (the report referred to was published in the RURAL some weeks ago,) is clearly Parasitic in its character and is due to picking up from the pasture the tiny *ava* of one or other of the many parasites inhabiting the unclean hog, as the *cysticercus*, *Toenia solium* and *serratum*, the *Trichina spiralis*, etc.

When the *ava* of the cysticercus of the hog is swallowed by young persons and young animals, measles (*Rehula*) is the result in one and a disease of the brain in sheep and cattle in the other. The disease then is the result of the swallowing of the *ava* or egg of parasites ejected from the hog, giving rise to constitutional irritation, followed by effusions of lymph, fluid or serum, into the sub-cutaneous tissue, and hence the extreme itching, (Psoigo) and in these cases exciting effusion (water) on the brain or at the base of the horn is merely the partial development of Hydatids Hydrocephalus; all my books and papers are now packed up to send to the country, and my time is now so short that I cannot refer to them, but I have merely given you a synopsis of this very simple, in its cause, affection, and the Scotch Farmer's course will have to be adopted in regard to the prevention of this affection in cattle as he does to prevent Hydrocephalus in his sheep and cattle, by keeping animals, as the hog and dog, from being amongst them, whose bodies are hardly ever without some of these parasites.

R. M. McCLURE.

On motion the report was placed on file.

The Club then adjourned to Saturday, April 20th.

The farmers have been very busy for the past few weeks getting in their crops, and the meetings of the Club have suffered in consequence. They are nearly through with their spring work, and the meetings will be more interesting in future.

Sacramento Farmers' Club.

A meeting of the Farmers' Club was held on Saturday at the Pavilion. The President, by invitation, submitted an essay upon subsoiling. He thought land, to make a large yield, should be plowed at least ten inches deep once in four years, and that soil was very much injured by plowing when the soil was wet. He concluded by referring to various means of subsoiling in use in this State, and the manner best adapted to different localities.

The Secretary was instructed to open a correspondence with the various farmers' clubs in the State, upon matters pertaining to the culture of fruit, particularly as to the effect of the past wet winter on the trees—and the prospect of the coming crop, also as to the prospects of other crops, and proposing to interchange such information with them.

Reports of the prospects of crops were then presented. Judge Baker, of Brighton, reported his peach crop short; plums, very short; apples and pears, plenty and doing well; prunes and almonds, ditto; grapes not injured by frost. Rutter, of Florin, thought these reports premature, as a long prevalence of high winds would do further injury; his peaches and plums were well set, but his apricots were extremely thin. Murphy, of Brighton, said that his peach trees were dying from surface water; pears, apples and plums, strawberries and blackberries were doing well. Miller, on the red lands, near Brighton, says his peach and apricot trees were dying from excess of water on the surface. Greenlaw, from the American river section, stated that it was somewhat singular that trees in his neighborhood, which have stood through winters heretofore, when covered with water were now dying, although the water has not reached within a foot of the surface, and varieties which have never been affected by curled leaf are now so troubled to a great extent.

A proposition was then introduced and discussed of forming a company, to be composed of members of the Farmers' Club, to ship fruit across the mountains; the proposition did not meet with general favor, but will be considered at next meeting.

After ordering as the subject for consideration next week, "The effect of the past winter upon fruit trees of the State, and the best means to prevent a similar injury in the future," the Club adjourned until next Saturday, at 1 o'clock.

POISONING.—A few days ago, says the Santa Barbara Times of the 12th inst., Mr. H. Beckwith, who has sheep in the Lompoc Colony, in the upper portion of the county, came near being poisoned, it is supposed, by one of his herders. The circumstances, as we learn them, are as follows: Mr. B. went to his dinner, and in eating it became aware of bitterness in the tea, beans, etc., and immediately suspecting something wrong, drank a bottle of oil, and started immediately for Buell & Thompson's ranch, where they administered a quantity of warm lard, which had the effect of relieving him.

A NEW CANAL.—Arrangements have been made, if the Fresno *Expositor* is well informed, for the immediate commencement of work upon the canal from Tulare Lake to Antioch. The survey is fully completed, and the work pronounced feasible and practicable. Save a divergence of about four miles in the vicinity of Firebaugh's Ferry the canal will run along and through the foot-hills. The Superintendent wants 5,000 men and teams to commence work immediately, and continue until the enterprise is fully completed.

PRESERVING FRUIT AND FLOWERS.—Dr. Piesse has recommended preserving fruit and flowers by simply immersing in melted paraffine and withdrawing quickly, when a thin coat of paraffine instantly sets and closes all the pores of the plants thus treated. The paraffine should not be hotter than just sufficient to liquify it; and the flowers should be dipped in separately (held by the stalk) and moved about in order to get rid of air bubbles.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

News, April 13: OAKLAND TO BANTAS.—There is no longer any doubt that the San Francisco Railroad Company intend to complete the branch road from Oakland to Bantas in season to enable them to transport the grain crop of the San Joaquin valley of the present year. Gangs of men are at work near Martinez, working both ways, and preparations have been made to commence at once at the Oakland end of the road. A gentleman who was in San Joaquin county about the middle of last month, and who owns about four thousand acres of wheat in that region, states that the grain crop is something wonderful all over that section. Early sown grain was then already over two feet high, and that sown later most vigorous and prospering. Wheat was beginning to lodge in some places, and there was some talk of turning in stock to eat down the surplus. On the west side of the San Joaquin, in Stanislaus county, there are over one hundred thousand acres of continuous wheat field. From Antioch to a point twenty-five miles above Hill's Ferry, a distance of one hundred and twenty miles, the whole country is one continuous wheat field. There will be millions of bushels of grain brought over the road this year, and the company are therefore preparing to transport it at as light cost to themselves as the nature of the country will permit.

LOS ANGELES.

News, April 6: WOOL FRAUDS.—Day before last, a quantity of wool consisting of ten bales, was received at the depot for shipment in behalf of one of our leading wool-dealers. Some suspicion was excited at the time in consequence of its extraordinary weight, and it was set aside for the purpose of giving it a thorough overhauling. Yesterday, the bales were opened, the contents taken out, and the fraud practised upon the buyer exposed. Of the five thousand pounds that the ten bales weighed before opening, about two thousand pounds consisted of dung-matted wool. The heap of dung when separated from the wool was almost its equal in size. These attempts at fraud are beginning to be rather to common now-a-days, and we learn that proceedings will be at once instituted against the culprit in this case.

It is estimated that 40,000 to 50,000 fruit trees principally oranges and walnut, have been set out since December last in this county.

PRIVATE advice received from the Land Commissioner at Washington, confirmed the decision of the Surveyor General of California in favor of the settlers on Rancho Peco De La Plaza, in the vicinity of San Juan Capistrano.

SAN CLEMENTE ISLAND lies about twenty-five miles west of Catalina Island, and is about its equal in size. At present it is utilized as a sheep-run, there being at the time of the last shearing from ten to fifteen thousand sheep browsing on its pasturage. In consequence of its distance from the main land, added to its isolated position, shepherds are dispensed with, and no attention is paid to the flocks by their owners from one shearing season to another. Strange to say, not a spring or stream of water has yet been discovered on any part of the Island. The sheep are supposed to obtain moisture to allay their thirst from the sea fogs with which the grass is almost constantly drenched. These fogs also sustain good pasturage throughout the year, and the sheep are always in good condition. The wool season having fairly set in, sheep shearers are now on their way to the island to ease the flocks of their fleeces. The wool is brought away in the schooner that conveys the shearers thither. The number of sheep on the Island cannot be ascertained until the shearing, which will continue for three weeks or a month, has been completed. Unless some evil has befallen the flock, their number now is double that of last year.

AT RIVERSIDE.—The promising settlement at Riverside continues to thrive satisfactorily. It now contains two hundred bona fide settlers, all of whom have located and occupied land in the settlement within the last sixteen months. The acreage under cultivation has increased considerably this season. One thousand acres have been put under wheat. There are also five hundred acres under corn and barley. As yet, only about twenty five acres of land has been planted with the grape vine. A much greater area would have been put under grape culture had

cuttings been obtainable. The land requires irrigation, but water for that purpose is plentifully supplied by the ditch from the river about fourteen miles in length. Another ditch is at present being cut, and seven miles of it has already been completed. There are three miles more to be cut ere the ditch will be ready for receiving and distributing water. The crops are in excellent condition, and the settlers in high spirits.

MERCED.

Argus, April 6: CROPS.—In the fore part of the present week we rode over a large portion of the county between the Merced River and Bear Creek, from the foothills to the San Joaquin River, and throughout the whole county the crops are better than we have ever before seen them at this season of the year. Even on the plains of Dover the small patches of land sown in grain give promise of good yields, proving that moisture alone is needed to insure a heavy yield of cereals. Along the south side of the Merced River the young grain looks exceedingly healthy and is more forward than usual at so early a period in the Spring. On the high lands south of McSwain's Ferry are the farms of Cressey, Pixley, Shaw, Gray, Atwater, Scott and others, comprising, in the aggregate, some twenty-five or thirty thousand acres sown in wheat and barley, all of which seems sure of yielding a larger crop than was ever before cut in that section of the county. Some farmers estimate the probable yield in that section at from 25 to 35 bushels per acre. The soil is a rich, sandy loam, and this is the first really moist season that this section has been favored with since its settlement by farmers. On the west side of the San Joaquin, in this county, we hear the most favorable accounts. The grain is even more forward there than on this side of the river, and farmers are preparing for an exceedingly large harvest. We understand that a larger breadth of land is being farmed than ever before, and the average yield may be estimated at 30 bushels of wheat and 50 bushels of barley, respectively, to the acre.

TALL BARLEY.—Peter Fee, Esq., left at our office this week a bunch of barley, in full head, measuring five feet in length, which he says is about the average of a field on his place. It is the handsomest specimen we have seen for several years, and if there should be nothing to blast it the field will make a remarkable heavy yield.

NAPA.

Tribune, April 11: On Saturday last Peter G. Storm (aged 73), of Calistoga, felled a large bee-tree, and captured a hive containing forty pounds of honey.

Sam Brannan offers to any parties wishing to experiment with silkworms in Calistoga all the mulberry leaves they may require, with house-room to operate in, free. He has on hand 8,000 four-year-old trees. This is a good opportunity for those who know anything of the business.

Near Calistoga there lives a family consisting of a father and several daughters. The farm is quite an extensive one, and among other stock, they have lots of milch cows. The young ladies are quite competent to do all the dairy work, and not too proud; and, as the yield of butter is greater than necessary for the use of the family, they generally sell the surplus to the stores, the proceeds of which are their perquisites. Some two weeks ago Miss Hattie "made a churning," and sent a number of pounds of butter in rolls, to the store, and, soon afterwards, missed a valuable ring from her finger. She could not tell what had become of it, and had given up all hope of recovering it. A few days ago, however, a lady who had purchased a roll of butter at the store, called and inquired of the dealers where they had procured the butter they had sold her. Fortunately one of them remembered having sold the lady the butter, a moment or two after it had been purchased, when she handed him a ring which she had found imbedded in a roll, and requested him to return it to the owner.

NEVADA.

Transcript, April 6: ANGORA GOAT CO.—We learn that the Angora goat company of Nevada City have purchased 135 additional goats. This makes a total of 280 goats belonging to the company. We understand the company propose to obtain several hundred more.

SACRAMENTO.

Bee, April 6: Enumerating last week the number of counties to which the No-Fence laws, passed at the late session of the Legislature, apply or may apply when the people so determine by vote, we omitted the counties of Butte, Los Angeles and

Santa Barbara—which we have since learned are included. With these, some twenty-eight counties, or over half the counties in California, can have the benefit of this law. And it may not be improper to here state that the general law passed on the subject is the production of Assemblyman Cooper from Santa Barbara, who labored assiduously during the session to that end, and accomplished, not all that he desired, but much that will be of lasting benefit to the State.

Much fear is felt by owners of orchards in the Sacramento Valley that their peach crop this year will be a failure, owing to the high water. In the lower portion of Sacramento City even the seepage water has risen so high that many hundreds of trees will be apt to die, and it is thought that along the Sacramento, as far down as Sherman Island, whole orchards will be ruined. In the "swamp land" country the farmers are taking precautions to prevent the threatened calamity.

SANTA CLARA.

Index, April 6: OUR GRAIN PROSPECTS.—The coming harvest in this valley promises to be so bountiful that it is feared that a sufficient amount of help cannot be obtained to gather it before the rains of next winter set in. The country for miles and miles on either side of Salinas City is covered with growing grain. The amount is estimated at one hundred and ten thousand acres. One ton to the acre is not a high figure to put the yield of this land. This will give us one hundred and ten thousand tons of grain. Sum this up at the low price of one and one quarter of a cent per pound and it will give the snug little sum of two million seven hundred and fifty thousand dollars. Surely farmers in this section have cause to rejoice.

SAN DIEGO.

Whaling at Punta Banda.—The whalers at Punta Banda, from all accounts, are doing a prosperous business. Thus far, this season, the number of whales taken by them is greater than during the entire season of last year. As the whales are still seen in large numbers, the expectations that they will double the quantity of oil they took last year is reasonable.

THE SPANISH BAYONET.—The plant of the cacti family, known as the Spanish Bayonet, is at present bearing large clusters of handsome flowers. Were they one quarter as fragrant as they are beautiful, they would vie with the most choice productions of a cultivated garden. Most of our readers, who have resided long in San Diego, have seen these flowers; but many of our visitors and recent arrivals have not. To such as wish to gather them, we direct to the hills in the rear of La Playa and Roseville. Here they may be obtained in unlimited quantities, and those who are fond of something that presents a beautiful appearance can find nothing handsomer to adorn a parlor than a bunch of these elegant flowers. They can be gathered so that by giving them fresh water they can be kept for a week or ten days.

SAN JOAQUIN.

Republican, April 9: MEN WANTED.—Already there is a demand for good farm laborers and as harvest approaches there will be employment for 1,500 to 2,000 laborers in the San Joaquin Valley. We mean that this number, in addition to those already here, will be required to harvest the crops. Now then, you big, sturdy fellows, who are loafing around San Francisco, looking for work, and hoping all the time that you won't find it, here is a chance for you all. During the harvest each of you can earn at least \$100. Our farmers are already hunting for good hands, and a few weeks hence the demand for field labor in this valley will be greater than ever before known.

RATHER EXPENSIVE.—Owing to the drouth of last summer a great many sheep growers of this county, drove their flocks over into the State of Nevada where grazing was better. The spring clip of these sheep must now be sent to market by railroad and the freight is quite an item. The Central people charge \$41 per ton for carrying wool from the vicinity of Battle Mountain to San Francisco. The distance is about 400 miles and each car load of ten tons costs the shipper for freight just \$410.

WEST OF THE RIVER.—C. D. Needham, who resides on the plains a short distance west from Bantas, brought to this office yesterday a sample of his crop of wheat and barley. The barley is about thirty-three inches long, and is a sample of the crop on about seventy acres of land. The wheat is nearly as rank a growth as the barley, and is a sample of the average crop on one hundred and seventy-five acres of land. The crops generally on the west

side of the San Joaquin river are remarkably promising.

SONOMA.

Democrat, April 6: A new town has been laid off and post-office established about eight miles from Sebastopol, in Anality township, bearing the name of Forrestville. A chair factory, blacksmith shop, store and several other branches of business have already been started at this point. The residents of this new town have displayed commendable energy in building, and, we have no doubt, will establish a place of considerable business importance. We wish them much success, and hope their enterprise will be rewarded.

The late heavy rains were followed by north winds, which rapidly dried the soil, and afforded our farmers an opportunity of seeding a large area of land. The weather has, for some days past, been very favorable—cloudy and moist. Although later than usual in planting, we are confident of an average crop. Ground seeded as late as the 8th of April, has been known to produce a good yield in this locality.

MONTANA.

Helena Gazette, April 1: MAGNIFICENT WEATHER.—In the peregrinations of a somewhat extended life, we have hibernated in all sorts of longitudes and latitudes, ranging from the valley of the beautiful Connecticut to the snowy regions of the Rockies which overlook Salt Lake valley, and from the barren shores of the northern lakes to the sandy beaches of the Gulf of Mexico. But never anywhere have we seen winters which please us so much as those of Montana. Once in a while there is an exception—such as November, December and January last—but even then we seem to be far more fortunate than other countries to the east and south of us. For the past two months the general character of the weather has been almost as near to perfection as could be expected of anything so essentially earthly in its nature. The number and character of the beautiful days which we have experienced for several weeks have, in their balminess and agreeableness, been greatly ahead of anything we have in all our life, met elsewhere than in Montana.

GREEN VEGETABLES.—Yesterday we noticed on our streets a load of vegetables, raised this season, on Wils Redding's ranch, known as the Hot Springs, on the Prickly Pear, consisting of onions, radishes and lettuce. Rather rushing the season on this upper range.

Independent: BIG BLACKFOOT VALLEY.—Mr. E. T. Hudson, of this city, who was all through the Blackfoot Valley, last summer, gives us the following in reference to it: The main valley on the river including the valleys along the creek, which extend back some distance into the mountains, contain good land enough to furnish homes for 500 families. In many places the rich black loam is ten feet deep. Grass grows so high that antelope cannot be seen in many places unless a man be on horseback or on an elevated place. Some of the creeks head up near the Jocko, rising out of large, deep, pellucid lakes filled with mountain trout and surrounded by beautiful parks of timber and broad prairies covered with bunch grass. Deer, elk, moose, bear, antelope and other varieties of game abound in the mountains. The entire length of the valley exceeds 45 miles, varying in width from three to twenty miles. There is not a single settler in all this valley, though the valleys of Nevada Creek, Douglass Creek and Elk Creek, which put in from this side, have had a few farms under cultivation for some years. The finest of wheat, oats, barley, potatoes, cabbage, and other vegetables do well in all these valleys, and it will not be long before all this fine land will be under cultivation. As the railroad approaches and the facilities for emigration are multiplied, so that people of moderate means can reach here without the heavy expense incident to a trip by Salt Lake, Montana will fill up rapidly. Emigrants coming from the States this year who desire to locate in one of our best valleys will do well to look at the Big Blackfoot.

BEAVER HEAD, March 26, 1872.—Correspondence of *Avant Courier*:

Farming has not hitherto been extensively carried on in this valley, the impression being prevalent that the soil was unfit for that purpose, but the experience of a few of our settlers during the past year has induced many to try it the present one. Stock raising, however, constitutes the principal resource of this section, and experience has proved that this place is pre-eminently adapted for that purpose as the finest grazing lands are to be found here in abundance.

HOME AND FARM.

Don't Leave the Farm.

Come, boys, I have something to tell you;
Come near, I would whisper it low—
You are thinking of leaving the homestead—
Don't be in a hurry to go!
The city has many attractions,
But think of the vices and sins,
When once in the vortex of fashion,
How soon the downward course begins!

You talk of the mines and their wealth—
They're wealthy in gold without doubt
But ah! there is gold on the farm, boys,
If you'll only shovel it out.
The mercantile trade is a hazard,
The goods are first high and then low,
Better risk the farm awhile longer—
Don't be in a hurry to go.

The great busy West has inducements,
And so has the busiest mart,
But wealth is not made in a day, boys—
Don't be in a hurry to start!
The bankers and brokers are wealthy;
They take in their thousands or so—
Ah! think of the frauds and deceptions—
Don't be in a hurry to go.

The farm is the safest and surest,
The orchards are loaded to-day;
You are as free as the air of the mountains,
And monarchs of all you survey,
Better stay on the farm a while longer,
Though profits come in rather slow;
Remember, you've nothing to risk, boys—
Don't be in a hurry to go.

Success in Farming.

I have to day visited a neighbor whose farm contains only twenty-eight acres. He has owned it and managed it for many years. His stock this year consisted of several horses and oxen, and twenty-eight cows, in addition to a considerable number of fowls. He sells milk, cream, roots, poultry and eggs. He buys some grain for his cows, though he has a good field of corn every year. All of the pasture required for his large stock, and all the hay and other long fodder consumed on the place, together with a good supply of apples, are the product of his twenty-eight acres of land. The great secret of his success is to be sought in plenty of manure and thorough work, managed, of course, in the most skillful manner. His cash sales for 1870 will fall but little, if any, short of \$4,000.

I have another neighbor who began with a fine farm of over one hundred acres, and capital enough to have made a first-rate farmer of an energetic man. He has probably never sold enough from his place to pay his yearly bills, and his land has run down to low-water mark.

These two men, living in the same township, and with equal facilities, illustrate perfectly the truth I have endeavored to set forth above. The one went to work in an over cautious, penny wise way, scrimping here and scrimping there, trying to cheat nature out of her just dues; and he has come to grief. The other went into farming as a business that was worthy of his best efforts, and whenever he saw an opportunity to invest a dollar in his farm to good advantage, he made the investment as soon as he could get the dollar. He acted on the belief that no bank in the world will pay such good interest as well farmed land; and, so far as the plain and simple farming he has followed afforded him the opportunity, he had omitted nothing—nothing that could add to his facilities. The result is that he is more than fore-handed, and, that, if he had his life to live over again, he would turn his attention to farming as the best opening that offers itself to a young man of energy and ability.—*American Agriculturist*.

ONE BUSHEL OF CORN WILL make a little over 10½ pounds of pork—gross.

When corn costs 13½ cents per bushel, pork costs 1¼ cents per pound.

When corn costs 17 cents per bushel, pork costs 2 cents per pound.

When corn costs 25 cents per bushel, pork costs 3 cents per pound.

When corn costs 33 cents per bushel, pork costs 4 cents per pound.

When corn costs 50 cents per bushel, pork costs 5 cents per pound.

The following statements show what the farmer realizes on his corn when in the form of pork:

When pork sells for 3 cents per pound, it brings 35 cents per bushel in corn.

When pork sells for 4 cents per pound, it brings 33 cents per bushel in corn.

When pork sells for 5 cents per pound, it brings 45 cents per bushel in corn.

Drilled and Hilled Corn.

At the Michigan Agricultural College, in 1868, two plots of land were set apart, substantially equal in character of soil, and measuring forty-eight rods in length by two in width. The ground was ploughed May 5, and manure was spread evenly and worked in by cultivator and harrow. Yellow Dent corn was planted May 21, in rows four feet apart; one of the plots being planted in hills, the other in drills, the plots were cultivated and hoed June 15, and again July 7—the plants being thinned so as to leave the same number of stalks on each plot, including an equal distribution of plants throughout the subdivisions of the plots. As early as possible, each of the two plots received the same amount of labor in cultivation. The stalks were cut at the bottom September 17, and stocked in good order. Three weeks afterward the corn was husked and weighed. The stalks were then again carefully stocked, and were hauled and weighed in good condition, October 12. The corn on the portion planted in hills was rather better in quality than on that planted in drills. But the drilled portion produced 74½ bushels of shelled corn and three tons of stalks to the acre, against 65½ bushels of corn and 2½ tons of stalks per acre produced by the portion in hills.

TO PROMOTE THE SPROUTING OF SEEDS.—According to the English Repertory of Patent inventions, oxalic acid promotes the sprouting of seeds, so that seeds thirty to forty years old will germinate by its application. The method is to soak the seeds in a solution of oxalic acid till they commence to sprout, when they are taken out and planted in the ground. Another means was found by the Count von Sternberg, who exhibited in 1834, before the meeting of German savants in Stuttgart, perfect grown ears of wheat raised from seed taken from Egyptian tombs, and therefore at least two thousand five hundred years old. All attempts to make them sprout failed till he placed them in fatty oils before burying them in the earth. They sprouted very slowly, it is true, but finally produced ears perfectly identical with the Talavera wheat. Coffee beans, in which, as is well known, it is very difficult to cause germination, may be made to sprout in twelve hours, if placed in a tumbler with water to which an equal part of spirits of ammonia have been added, the glass being covered by a piece of wood, and exposed to a moderate heat. In twelve hours the roots are seen to project to a distance of several lines, and even the commencement of leaf-formation may be seen by careful observation.

A STITCH IN TIME.—If your harvester or thrasher, or any of the machinery upon which you are relying for the gathering of the crop and its preparation for market, are out of order, see to them at once. If they have been housed, as they ought to be during the season when not in use, bring them out and overhaul them. If any thing needs to be renewed, order it from the manufactory or its agent without a moment's delay. Hours a few weeks later will be worth days now, and if there is any doubt as to the probability of your machinery carrying you through harvest give yourself the benefit of the doubt by making success sure. If the old machine cannot be fully trusted, sell it to some neighbor—who, having less for it to do, can better afford to take the risk of its failure—and buy a new one. In making your selection, buy with the view, not to the present, but the ultimate cheapness of the new machine. What may seem economy now may, and doubtless will, prove improvidence even before your crop is off. A strictly standard article will cost more at the outstart, but—as shown by experience—will prove the cheapness, not only "in the end," but always. The best is always the cheapest.

WAGES.—Here is an illustration of the fact, that farmers are paying higher wages for labor than they can afford. A Western farmer being obliged to sell a yoke of oxen, to pay his hired man, told him he couldn't keep him any longer. "Why," said the man, "I'll stay and take some of your cows in place of money." "But what shall I do," said the farmer, "when my cows and oxen are all gone?" "Why, then you can work for me and get them back."

The natural produce of wheat in our country, under careless cultivation, is about sixteen grains to one; the unusual produce, under the highest order of garden culture, has gone as high as seven thousand four hundred and forty-five grains to one.

STOCK RAISING.

Facts in Stock Raising.

Mr. J. Harris, in the *American Agriculturist*, says:

Many farmers say it does not pay to keep stock, and in point of fact they are very often in the right. I can hardly see how it pays to keep a wether sheep three years and six months, getting say seven dollars for the three fleeces, and then selling him for three dollars. But I think it must be quite as profitable as to keep a steer the same length of time, and then sell him for fifty dollars. Such a steer will eat as much as eight or ten Merino sheep. But the truth is, we cannot expect to make anything by keeping stock of any kind unless we keep it well; it must be gaining all the time. If we let a machine lie idle all that we lose is the interest on the money which it cost. But an animal cannot be kept idle. It must eat every day; and if it gains nothing we lose all the food and the interest on the value of the animal machine besides. But many farmers not only keep them for weeks and months together without their gaining anything, but it not unfrequently happens that the animals actually decrease in weight. It has to live on its own flesh and fat, which is certainly a very expensive food. Even in the case of well fed pigs, which store up more flesh and fat for the food consumed than any other animal; for every pound of flesh and fat we get in the animal they eat about five pounds of food. They use four pounds to live on and give us one pound of flesh. And when we have got this one pound, how excessively wasteful it is to feed it to the animal and have it worked over again; and yet this is precisely what thousands of farmers are doing to-day with cows, sheep and pigs. No wonder that "keeping stock does not pay." But good stock, fed liberally and with care and judgment, will pay better, all things considered, than any other branch of farming. Good meat brings a good price, and is always in demand. It is the "scallawags" that are hard to dispose of, and always at a loss—a loss to the producer and a loss to the consumer. Those who buy such meat get little besides bones and water. The poor animals have had to live on their own fat and their nutritious juices.

The first step in keeping good stock is to make the land dry and clean. The next is to feed liberally, and this will insure good manure, and that in its turn insures good crops.

It is all very well to say that a "peck of clover seed to the acre is the cheapest fertilizer," and that by its free use we can dispense with manure. I do not dispute the truth of this proposition. No one thinks more highly of clover than I do. But it only tells half the story. Clover makes good food and good manure too. An animal will take out the food, convert it into valuable products, and leave the manure behind. Our aim should be dry, clean land, more clover and rich grass, more and better stock and more and better manure.

It cannot be too often repeated, however, that the value of manure depends on the food and not on the animals. A raw-boned steer, if it has the same food, will make as rich manure as the best Shorthorn in the herd book; and the droppings of a Merino sheep living on clover hay and oil cake are just as valuable as those from a Cotswold. But this is the point. We cannot feed clover hay and oil cake to a Merino with half the profit that we can to a Cotswold. The former is adapted to live on comparatively poor food and grow slowly; the Cotswold has been bred with especial reference to rapid growth on rich food. So when we advocate keeping well bred stock, in order to make rich manure, we do so for the simple reason that we cannot afford to feed rich food to poor stock, and without rich food we cannot have rich manure.

SHELTERING GOATS.—A gentleman in this county who has gone into the Angora goat business extensively, and has a large flock of goats, last Fall built a spacious corral and erected weather-proof sheds that he might protect his property from inclement weather. When the first heavy storm came he drove all his goats into the corral when night came. Late in the evening he thought he would go and look after his property. A careful examination disclosed to the astonished goatowner that not one of his live stock was to be found inside of sheds or corral. Just as our Angora capitalist was about to leave in the profoundest disgust with his investment, he happened to elevate his lantern and cast

his eyes upward, when lo and behold, there was his entire flock of goats perched on top of the sheds he had constructed with so much care and expense, evidently enjoying the heavy rain storm which was pouring down. Who says that goats won't thrive anywhere after this.

Wrinkles on Horns.

A correspondent of the *Rural New Yorker* says:—"It is considered by most cattle breeders that the wrinkles on the horns of an ox or cow are a true reading of their ages. This, as a general rule, is correct; but, like other 'general rules,' it has deviations, in enumerating which I will give the philosophy, as given to my satisfaction by an experience of some fifteen years, during which time I have been more or less working with cattle. I firmly believe the wrinkles on the horns are governed by the shedding of the hair more than by the age.

When the animal sheds its hair the third time, it makes a wrinkle on the horn which is perceptible; until that age, the wrinkle is generally imperceptible—there are some exceptions—and every time thereafter that the animal sheds its hair there will be a perceptible wrinkle on the horn.

An animal that is three years old in the fall sheds its hair the third time, in the spring previous, and, as a consequence, has a wrinkle on its horn for the two and one-half years old; and should any calamity occur which will reduce it in the summer, and it sheds its hair twice in the same year, there will be two wrinkles for that year."

Breton Cows.

Prof. William H. Brewer, of Yale Scientific School, recommends the Breton cattle for scanty pastures. They yield eight times their weight of milk per year and thrive well where other breeds fail. They are noted throughout France for their milking qualities. Though smaller than the Jersey, they are more hardy, yield similarly rich milk, and thrive well on poor soils. They are a breed for poor lands and thrive where other breeds fail. This is about the correct idea of the Breton cow. She is small, hardy, capable of living on little and yielding a large yield of rich milk. The results of five cows are given by Prof. Brewer with an average of 429 gallons of milk from calving to calving, the largest yield being 476 gallons. This is not large for a large sized cow, but for a little cow, like the Breton, it is a generous yield, considering the small quantity of food she requires.

DENTITION OF ANIMALS.—A correspondent of the *Musk Lane Express* says that the dentition of animals, as a test of age, is now exciting considerable interest among English farmers, on the account of the disqualification of Lord Radnor's pigs at the Birmingham Cattle Show. Owen Wallis of Mentone states that on one occasion, when drafting his yearling ewes, about the end of September or beginning of October, he found one with all its lamb teeth undisturbed, and showing no signs of putting up permanent ones; while many others of the same age had four broad teeth, nearly fully developed. As these sheep had all been bred alike, the one in question being perfectly healthy and an average size, he wishes to have the great difference accounted for by veterinary professors. That they are generally correct in their decisions he has no doubt, but he thinks that the case described tends to show that the teeth are not to be relied on as an unfailing test of age, and as such great discrepancies do occasionally occur, minute ones may do so frequently, and, therefore, injustice may be done to exhibitors by disqualifying animals by the dentition or tooth test.

IMPORTANT TO STOCK FEEDERS.—T. J. Edge, in the *Practical Farmer*, says he had found that five bushels of whole corn, fed raw, made but forty-seven and three quarter pounds of pork; that five bushels, less the toll for grinding, fed mixed with cold water, made but forty-four and a half pounds; but that the same quantity of meal well boiled, and then fed cold, made eighty-three and three quarter pounds. He says merely scalding the meal with boiling water fails to develop all the nutriment; and that he "fastens down the lid of his barrel until the pressure of steam gets into it, as high as five pounds to the inch in the barrel and steamer." As friend Edge is a very painstaking Quaker farmer, his experiments may be implicitly relied on as correct.

USEFUL INFORMATION.

The Nature of Different Resins.

Dr. Sacc, of Neuenburg, Switzerland, has made an extensive inquiry into the nature of different resins. We condense from it the following results. The resins spoken of are copal, amber, dammar, common resin, shellac, elemi, sandarach, mastic, and Caramba wax. All these resins can be reduced to powder.

The following will become pasty before melting: amber, shellac, elemi, sandarach, and mastic; the others will become liquids at once.

In boiling water, Caramba wax will melt; common resin will form a semi-fluid mass; dammar, shellac, elemi, and mastic will become sticky; while copal, amber and sandarach will remain unchanged.

Dammar and amber do not dissolve in alcohol; copal becomes pasty; elemi and Caramba wax dissolve with difficulty; while resin, shellac, sandarach and mastic dissolve easily.

Acetic acid makes common resin swell; on all the others it has no effect.

Caustic soda dissolves shellac readily, resin partly; but has no influence on the others.

Amber and shellac do not dissolve in sulphate of carbon; copal becomes soft, and expands; elemi, sandarach, mastic, and Caramba wax dissolve slowly; while resin and dammar dissolve easily.

Oil of turpentine dissolves neither amber nor shellac, but swells copal; dissolves dammar, resin, elemi, sandarach, and Caramba wax easily, and mastic very easily.

Boiling linseed oil has no effect on copal, amber, and Caramba wax; shellac, elemi, and sandarach dissolve in it slowly; while dammar, resin, and mastic dissolve easily.

Benzine does not dissolve copal, amber, and shellac, but does elemi and sandarach to a limited extent, and Caramba wax more easily; while dammar, resin, and mastic offer no difficulty.

Petroleum ether has no effect on copal, amber, and shellac; it is a poor solvent for resin, elemi, sandarach, and Caramba wax, and a good one for dammar and mastic.

Concentrated sulphuric acid is indifferent to Caramba wax; it dissolves all resins, imparting to them a dark brown color, excepting dammar, which takes a brilliant red tint.

Nitric acid imparts to Caramba wax a straw color; to elemi, a dirty yellow; to mastic and sandarach, a light brown; it does not effect the others.

Ammonia is indifferent to amber, dammar, shellac, elemi, and Caramba wax; copal, sandarach, and mastic become soft, and finally dissolve; while resin will dissolve at once.

It is not difficult by means of these reactions to test the different resins for their purity.—*Deuzlin, Polytechnic Journal.*

EXPERIMENTS ABOUT HEAT.—The Providence *Journal* gives the following interesting experiments made in that city with an excellent glass-mounted thermometer.

In the house with open windows it stood at 90.2°. Out of door in the shade at 95°—freely suspended in the sun six feet above the green-sward 99.5°. In the same position with wet bulb 79.9°—with bulb covered with black silk, 109.96°. When laid upon the grass in the sun it rose to 104°. Laid upon white cloth, placed upon the grass, 105.0°, and when similarly placed upon black silk it indicated 113°.

The experiments with different colored coverings show very conclusively the utility of light colored clothing for those who are obliged to be exposed to the direct range of the sun at high temperatures—and the experiment with the wet bulb shows as clearly the value of free perspiration in keeping down the temperature of the body, which, however, the observer finds in his own person, notwithstanding the perspiration while making these experiments, to have risen to 100.5°—which is about two degrees above the usual standard for cooler days. The average temperature of the healthy human body throughout the year, in temperate climates, is 98.4°—while in tropical regions it is about one degree higher.

THE LARGE CLOCK at the English Parliament House is the largest one in the world. The four dials of this clock are twenty-two feet in diameter. Every half minute the point of the minute hand moves nearly seven inches. The clock will go eight and a half days, but it only strikes for seven and a half, thus indicating any neglect in winding it up. The pendulum is fifteen feet long, the wheels of cast-iron, the hour bell is eight feet high and nine feet in diameter, weighing nearly fifteen tons, and the hammer alone weighs more than 400 pounds. This clock strikes the quarter-hours, and by its strokes the short hand reporters in the Parliament chambers regulate their labors. At every stroke a new reporter takes the place of the old one, whilst the first retires to write out the notes he has taken during the previous fifteen minutes.—*Er.*

IVORY is bleached by exposure to sunlight. For piano makers and others, it is prepared by first sawing it into thin sheets or plates. These are placed on suitable frames, under glass, and exposed to light for several months. The frames are of peculiar construction and patented. They are so arranged as to shift, thus reversing the exposure of the ivory, so that both sides may be duly acted upon by the light.

LONG and repeated boiling injures glue.

Sparrows and Mosquitos.

A highly respectable gentleman of New York, well known in this city, having noticed our recent allusion to the great increase of mosquitos in Boston, writes us a private note on the subject. He says that for three years past these pests have been diminishing in New York city. He had been in the city day and night during June and July just past, and had not yet seen one mosquito, nor heard but two or three during the night watches. He attributes this change to the active services of the English sparrow, which have recently been introduced in that city. Four years ago, twenty pairs were imported, and provision was made for their accommodation. Now it is estimated that there are five thousand pair in the New York park and gardens; and their active and industrious habits are believed to have materially diminished the swarms of mosquitos which have heretofore made New York a byword and a hissing among all light sleepers who have sensitive skins. This theory is strengthened by the fact that the same experience has marked the introduction of the sparrows into Jersey City—the mosquitos have greatly diminished there even, which is mosquito land itself.

If there is anything in this—if the English sparrow does actually wage war on mosquitos, as on measuring worms and caterpillars, and other insect nuisances, which threatened at one time to compel the removal of shade trees from all our cities and towns—then we go for importing one thousand or five thousand pairs at once, to be domesticated in Boston and immediate neighborhood, as a matter of more importance to the peace and comfort of our citizens than would be the addition of one hundred extra policemen.—*Boston Traveler.*

FASTENING LOOSE WINDOW-SASHES.—The most convenient way to prevent loose window-sashes from rattling when the wind blows, is to make four one-sided buttons of wood, and screw them to the stipes which are nailed to the face-casings of the window, making each button of proper length to press the side of the sash outwards when the end of the button is turned down horizontally. The buttons operate like a cam. By having them of the correct length to crowd the sash outwards, the sash will not only be held so firmly that it cannot rattle, but the crack which admitted dust and cold air will be closed so tightly that no window-strips will be required. The buttons should be placed about half-way from the upper to the lower end of each stile of the sashes.

CANAL BOAT PROPULSION.—Dr. R. Hunter, of Cleveland, Ohio, has invented a method of propelling canal boats by means of an india-rubber plate attached to the stern of the boat and actuated by steam in the manner of a fish's tail.

Mechanical Hints.

BEST TIME FOR PAINTING HOUSES.—*Technologist* says: The best time for painting the exterior of buildings is late in the autumn or during the winter. Paint then applied will endure twice as long as when applied in early summer or in hot weather. In the former it dries slowly and becomes very hard, like a glazed surface, not easily affected afterwards by the weather or the beating of storms. But in very hot weather the oil in the paint soaks in the wood at once, as in a sponge, leaving the lead nearly dry and nearly ready to crumble off. This last difficulty, however, might in a measure be guarded against though at an increased expense, by first going over the surface with raw oil. By painting in cold weather, one annoyance might be escaped, namely, the collection of small flies on the fresh paint.

OIL FOR HARNESSES.—Harnesses, it is said, may be rendered impervious to water by thoroughly impregnating them with a mixture made in the proportion of twenty-one gallons of pure whale-oil and fifteen to seventeen pounds of india rubber shreds. Heat these ingredients together at a temperature of from 194° to 240°, which will insure the dissolution of the rubber.

ANOTHER.—Alcohol, 1 gallon, white turpentine, 1½ lbs., gum shellac, 1½ lbs., Venice turpentine, 1 gill. Let them stand by the stove until the gums are dissolved, then add sweet oil, 1 gill, and color, if you wish it, with lamp-black, 2 oz. This will not crack like the old varnish.

ELASTIC VARNISH FOR LEATHER.—Take two parts by weight of resin, and one of india rubber, and heat them in an earthenware vessel till they are fused together; after which they should be stirred till they are quite cold; a little boiled linseed oil may be added while the materials are hot.

TO IMPROVE GILDING.—Mix a gill of water with two ounces of purified nitre, one ounce of alum, one ounce of common salt; lay this over gilt articles with a brush, and the color will be much improved.

ANY hard, steel tool, will cut glass with great facility when kept freely wet with camphor dissolved in turpentine. The ragged edges of glass vessels may also be thus easily smoothed by a flat file.

CLEANING BRASS.—One of the best liquids to clean old brass is a solution of oxalic acid.

GOOD HEALTH.

More About Tight Shoes.

Poor, little, pinched, tired feet! How my heart ached for them, as I saw them encased in snug, trim, buttoned boots! They were on the feet of a little girl, four or five years of age. The "night train" had just reached its destination, and early morning found us very tired and sleepy as we stepped to the platform and hurried on our way.

The child had evidently worn those new, tight boots all night, and was now so stiff and lame that each step was a distortion of her dear little feet and ankles. How she must have suffered during the long, long hours of that night of travel! I could but contrast her appearance with that of a little boy by my side, whose shoes were old, and easy, and comfortable. I knew that he had enjoyed a nice night's sleep, with day clothing laid aside, and robed in his night dress as at home. Now he was bright and fresh, and well fitted for the day of travel before him, while the other little one was just the reverse. I thought: "When will parents learn common sense, and dress their children for comfort!" All day long, as I journeyed on, and many times since, have I seen, in imagination, the poor, little, pinched feet, as I saw them on that morning.

Tight shoes—what misery they give! Who of us has not worn them, and suffered in them, and felt as though we could not endure them a moment longer? How our tempers have been turned, and peevish or angry retorts given, all on account of tight shoes! Away with tight shoes, both for ourselves and all under our care! They are a deadly foe to comfort and happiness.

Let us also be charitable to the failings and faults of others; for if not caused by tight shoes on the feet, they may be pinched somewhere, either in body or mind. There are aches and pains, secret trials and disappointments, that may be called the tight shoes of the soul; and how often we wear them perversely, suffering anguish when we have only to throw off the bondage, the desire for conventional trimness of effect, and, shod appropriately and sensibly, step forth cheerily on our way.—*Hearth and Home.*

Morbid Sorrow.

Too often it is the case that men remember their sorrow, and do not register their joy. But even under afflictions, if men did but know it, there are musical tones which might strike through the requiem's wail. There are lights that might illumine the dark, Rembrandtian sorrows. Men fall into a mania. Sorrow takes on a diseased form. It becomes morbid. It whets and stimulates itself. It ferments. It overflows. It tinges the whole mind from top to bottom with its color. As just after a drenching rain every twig on the tree is fringed with the drops, and every leaf weeps; and, as when some gust of wind strikes it the tree rains again, as if it were a cloud; so, when sad experience comes upon us, we are apt to be remorseless with ourselves, and to work upon our own susceptibilities. We do not put hope over against despair, and cheer over against gloom. Therefore much of the suffering which men have in life, much of the gloom which they are under, results from the not using of themselves wisely. I see in many who come to me a morbid taste for suffering. It is a hideous form of excitement. Persons at last even come to a state in which they want to suffer—or rather, want to be thought to suffer. They want to reap in the fields of sympathy this abnormal and, what seems to me, hideous praise of seeming to suffer. Sometimes no greater offense can be given than to compliment persons on their health, and happiness, and prosperity. For they are martyrs, and they walk under a cape of sadness; and not to recognize that, is to deny them the chief pleasure almost of their life. To be miserable is their joy!—*Beecher.*

REPORTED CURE OF HYDROPHOBIA.—In the newspapers appears the statement of a case of hydrophobia which occurred at or near Detroit, and which was treated successfully by the following means: One grain sulph. morph. was injected hypodermically every four hours, and 30 grains castor given at the same intervals. Small quantities of chloroform were also inhaled. Sleep was produced in half an hour, lasting an hour and a half, and finally the convulsions ceased. The patient was wrapped in a woolen blanket wrung out of a warm solution of muriate of ammonia, 20 grains to the ounce; but this was not done till the symptoms began to yield. There was nothing very novel in this treatment, especially as to the morphia and chloroform, which were doubtless the efficient agents, admitting the case to be correctly stated. The castor and the warm fomentation may have aided slightly. But the patient is described as "barking like a dog," seizing the pillows in his teeth and shaking them like a ferocious dog, etc. This part of the story does not add to its credibility. It is matter of surprise that newspapers conducted by intelligent men will from time to time give currency to such statements, whilst physicians everywhere have declared against them as popular errors. Probably one-half the civilized world still believe that men with hydrophobia act the part of rabid dogs, and are frequently relieved from suffering, through professional authority, by pressure between feather beds.—*American Chemist.*

WHAT TO DO IN EMERGENCIES.—If a person falls in a fit, and begins to snore loudly, with a very red face, it is apoplexy. Let him be seated so as to favor the blood going downwards, from the head; apply cold cloths to the head, or cashions to equal quantities of snow or pounded ice and common salt. If the person is perfectly still, face pale, and there is no perceptible breathing, it is a fit of fainting. Do not touch him, except to loosen the clothing; then keep off five or ten feet distant, so as to allow the air to come in; make no noise, and there will soon be a calm, quiet return to consciousness and life, for it is only a momentary cessation of the circulation of the blood to the head. But suppose there is a very violent motion of the hands and feet, and are all sorts of bodily contortions, it is epilepsy. Let the man contort until he is tired; you can't hold him still; all your efforts only tend to aggravate the trouble and exhaust the strength; all that ought to be done is to keep the unfortunate from hurting himself. There is no felt suffering, for as soon as he comes to he will tell you that he remembers nothing whatever of what has passed, appears to be the only calm and self-possessed person in the whole crowd, and is apparently as perfectly well as before the occurrence. Dizziness often comes instantaneously, and we begin to reel before we know it. Shut the eyes, whether you are walking along the street, looking over a precipice, ascending a ladder, or climbing to a ship's mast head; the fear of dizziness disappears instantly if you look upwards.—*Hall's Journal of Health.*

ANTIDOTE TO PHOSPHOROUS.—It is well known that many metallic salts, such as acetate of lead, sulphate of copper, salts of mercury, bismuth, etc., are withdrawn from their aqueous solutions by vegetable charcoal, but to a still greater extent by mineral black. Carbon also absorbs many alkaloids from their solutions, and it is upon this property that the process is based for the detection of strychnine in beer by its means. MM. Euleuberg and Vohl now show that phosphorous is also absorbed by carbon, and to such an extent that carbon taken in the form of pills constitutes a complete antidote to the poison, and relieves those who have to manipulate phosphorous from all the disastrous consequences hitherto accruing. The experiments they have made upon animals have yielded exceedingly favorable results. They prepare the animal charcoal pills by powdering the charcoal and making it up with a little gum. In match-factories they find the results of these pills are better than those obtained by the use of the essence of terebinthine of M. Personne, as the continued use of the latter was found to produce violent headaches.—*Am. Artisan.*

CALIFORNIA BOARD OF HEALTH.—Dr. Logan in his last monthly health report, says:—The State continues in the possession of the high sanitary condition that has ruled for some time past. Pneumonia and catarrhal affections have prevailed pretty generally, but of a mild form; also, rheumatism. Several well marked cases of scarlatina have been observed in different points. Small-pox still continues by frequent importations from other places, but owing to the prompt measures adopted in isolating the cases as soon as discovered, it has not spread. There is now one case in Sacramento, which is quarantined in a tent some two miles from the city. Vaccination has been so general as, probably, to render it impossible for this disease to prevail to any extent during the approaching dry season.

EXERCISE.—The amount of daily exercise necessary for health depends upon the kind of exercise, and varies considerably with different persons and with the same person at different times. A safe rule to go by is to exercise until slightly fatigued. It should not be continued so long that half an hour of perfect rest will not entirely remove all feeling of fatigue. Special exercise for retaining health should not as a general rule be taken less than two or three hours after a meal, except it may be some light exercise, as moderate walking, riding, etc. A person should always be thoroughly rested after exercise, before eating; perhaps the very best time of day for taking exercise is from 10 to 12 o'clock in the forenoon, although the time may be varied to suit the person's convenience.—*Herald of Health.*

TO CURE THE LOVE OF ARDENT SPIRITS.—Captain Hall was the commander of the Great Eastern steamship. He had fallen into such habitual drunkenness that his most earnest efforts to reclaim himself proved unavailing. At length he sought the advice of an ancient physician, who gave him a prescription which he followed faithfully for seven months. At the end of that time he had lost all desire for liquor, although he had many times been led captive by a most debasing appetite. The prescription, which he afterwards published, and by which so many other drunkards have been assisted to reform, is as follows: Sulphate of iron, 5 grains; magnesia, 10 grains; peppermint water, 11 drachms; spirit of nutmeg, 1 drachm; twice a day.

TO RELIEVE FROSTED FEET.—To relieve the intense itching of frosted feet, dissolve a lump of alum in a little water and bathe the part with it, warming it before the fire. One or two applications is sure to give relief.

WHOOPING COUGH is now cured by compressed air. Dr. Sardahl, of Stockholm, reports 102 cases rapidly cured by this treatment.—*Medical Journal.*



PUBLISHED BY

DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 333 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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Subscriptions payable in advance.—For one year \$4; six months, \$2.50; three months, \$1.25. Clubs of ten names or more \$3 each per annum. \$5, in advance, will pay for 1½ year. Remittances by registered letters or P. O. orders at our risk.

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Yosemite Art Gallery.—Mr. C. E. Watkins has recently fitted up new photographic rooms at 22 and 26 Montgomery St., which were opened one day last week to the members of the press. There is a large reception room, parlor, dressing rooms, and a finely fitted up operating room. The walls are covered and ornamented with photographic views, landscape and portrait. Mr. Watkins has been very successful as a landscape photographer, and the numerous specimens of his art at the rooms are well worth seeing. The California and Oregon views, especially those of the Yosemite Valley, are particularly interesting. A public reception will take place shortly. Mr. Watkins has views of Mt. Shasta and the Glacier, which are very fine.

The farmers of San Jose are agitating the question of forming an association and carrying on a co-operative store, whereby they will get their goods at first cost and expenses.

Pumpkins among Corn.

It is a practice with many farmers to plant pumpkins among their corn, thinking that they obtain by this course a double crop or nearly so from the same ground in a single year. It is a mistake. True they get two crops, but it is at the expense of a perfect crop of either. Not that the land is not rich enough to bear the double burden, or that one plant draws from the other any portion of the nutriment necessary for the others sustenance; but it is owing to the effect of the two crops commingled, preventing the proper action of the sunlight upon that portion of the plant above ground, or the heat of the sun upon the soil.

The corn gets all it wants of the sunlight upon its tall stalks and spreading blades, but it also wants the heat of the sun to warm the soil, and without this the crop will not attain to its fullest perfection. To cover the ground therefore with the broad leaves of the pumpkin vine effectually shuts out the warmth of the sun from it. On the other hand, pumpkins require the full blaze of the sunlight upon their leaves, and this, with a full supply of moisture from below, will insure a full crop. Experiments have been frequently tried, that have clearly and beyond all doubt proved, that it is better to devote a portion of the land exclusively to one of the two crops, than to grow both together. The greater injury is always to the corn crop; in many cases by actual test lessening the yield from one-fourth to one-third; which is not made up in value by the pumpkins, where the corn crop is the main object of culture.

Re-potting Plants.

EDITORS RURAL:—Why do my plants when I try to re-pot them, more than half die? I am as careful as I can be, but they never seem to do as well after being re-potted as before.

QUERIST.

The re-potting of plants seems to us, and will to you, when you understand how to do it, as a very simple operation. In the larger pot to which you wish to remove the plant to, put a full inch of drainage; which consists of very coarse gravel or fragments of an old broken pot, cover this with a layer of earth sufficient for the growth of your plant; one, two or three inches in depth. Now run the plant between your fingers with the palm of your hand downward, next invert the pot, and a few gentle taps will loosen the ball of earth from the pot without disturbing the roots; now remove any of the old drainage that may adhere to the ball or roots of the plant and carefully set it down into the new pot, which ought to be an inch larger than the old one all round; fill in with earth firmly, and for two weeks give your plant but little water; and your success will please you.

Peanut Culture.

EDITORS PRESS:—A little more information concerning peanut culture if you please. Would like to know the best time for planting; also how much seed to the acre, and where could good seed be procured; and what would be the probably cost of seed by the pound or bushel?

If convenient, please let me know the several items immediately, as I would like to engage in the culture this spring, if not too late.

E. C. H.

Sherwood Valley, March 29, 1872.

It is not too late to plant peanuts any time in April, if we get the usual spring rains; but from the first to the 15th would be preferred. Raw or uncooked peanuts of the best quality for seed, can be had in abundance in San Francisco from 6½ to 7 cents per pound in the shuck, by the sack; of about 80 pounds to the sack.

It requires from 80 to 100 pounds in the shuck to plant an acre, depending on the distance observed in planting—so say the seedsmen of our city. A "Chinee" who has grown them successfully four or more years says:—"Plant four feety thisy way, two feety thaty way, you wanty 90 pounds; planty three feety thisy way, 20 inches thaty way, you wanty 140 pounds one acre."

CABBAGE LICE.—T. R., of Elliotts, San Joaquin Co., says:—To destroy cabbage lice effectually, dust a little sulphur on the cabbage occasionally; one or two applications will kill all the lice.

Last season a farmer in Linn Co., Mo., with the assistance of two small boys, raised 10,143 pounds of tobacco, which he lately sold for \$8 per hundred.

Budding with Blossom Buds.

EDITORS PRESS:—In your issue of March 30, you say, who can beat it? I think Stanislaus county can. I had several peach buds bloom last year and some buds that grew nine feet high with side branches and bore a full crop at one year old. I have quite a number of buds set last July with peaches on now. I set my buds earlier than most orchardist. The reason I set blossom buds was the fact, that wood buds were scarce of the kind I wanted. I have also had buds start and grow 12 inches long the same fall, by setting early in July. I think I beat California last year on peaches; I sent some to the Mechanics' Fair at San Francisco, and they beat any they had. I took some to Stockton market, and all acknowledged them the best of the season. Now if you think us worthy a passing notice we would like to hear from you through your very valuable paper. J. L.

It is not unusual to have buds that are inserted early in the season, make a considerable growth the same year. With the peach and other trees of luxuriant growth, nurserymen sometimes practice this mode of propagation. They bud early, in fact as soon as the newly formed buds have matured sufficiently to handle. Set them as high on the young tree as its size will permit; and at the end of a week thereafter cut away the entire top down within an inch of the inserted bud, and a few days only will be required to make it start into immediate growth, with a gain of at least a half season's growth over the same bud had it been permitted to remain dormant till the following spring.

The Vine and the Cottage.

Among the thousands of men of moderate means, who own their little cottage, in every town and village in the land, too many are found without the simple adornment of a vine of any kind or variety. We do not refer to the absence of a garden or even a miniature vineyard of a few vines, for oftentimes there is not room either in front or back yard of the cottage for either. And yet there is room for a vine or two or three of them, so that there is a bare spot of ground in one corner, of a foot square not covered by a building.

Let a vine be planted there, and if there is no room for a little covered way of trellice work, carry the vine up the side of the doorway and let it spread over the whole wall of the house, and year by year it will repay you for your care, in the luscious fruit it affords, besides the real pleasure it gives in witnessing its annual expansion. If you are in a locality too cold for a fruit-bearing vine, then take one of the many hardy, beautiful flowering vines or runners to be had of almost any florist and plant it out, and let the wife and daughters see that it be properly trained and cared for, and it will prove a thing of beauty and of course a joy forever, or for many years.

The Dooryard.

Let the trees or shrubs you plant in your dooryard be in proportion to its size; never put large or tall-growing trees in a small yard; it is not in good taste in the first instance, and then in a very few years it will be found to be so near a nuisance that you will be tempted to cut it down; but as this would bring you back to a treeless yard, you allow it to remain till it completely overshadows everything else, preventing even your favorite flowers from half perfecting their bloom or the green grass to grow, when at last you are compelled to remove it, and begin anew.

Determine when you begin, whether you will have the green and ever beautiful grass plat, with a few choice plants here and there, or whether you will devote it to the more elaborate and artistic flower parterre, requiring much more time to dress and keep it, but daily giving out its profusion of delights, greatly in excess of what the simple grass plat, or the somber evergreens can do. You cannot well have them both in a small dooryard, or if having them, you cannot have them both in perfection. In all cases let the extent of your grounds determine the varieties and qualities of the trees and plants that are to occupy them, and then have a care that you do not crowd in too many large trees.

ALL house plants are better for being watered with water several degrees warmer than the atmosphere in which they are grown.

SHALLOW plowing, without manuring, operates to impoverish the soil, while decreasing production.

The Late Rains.

From telegrams received it appears that the rains commencing last Sunday night, and continuing at intervals since that time, have been general all over the middle and northern portions of the State, and we hope to hear the same good news from the extreme southern. The glory of it is too, that they have not had a mere sprinkle of an April shower, but a good and copious rainfall, sufficient not only to melt the dry, hard crust caused by the recent severe northers, but to completely saturate the soil down to permanent moisture, giving the late sown grains the greatly needed stimulus for an immediate and rapid growth; insuring the more advanced growth against any lack of moisture, and evidently relieving the whole people, farmers, miners, mechanics and merchants, from any immediate apprehensions that may have been caused by the holding off of the annually expected early April rains. From this time on to the harvest, if we can have but one more dash of rain in about two or three weeks from this, sufficient to give our grain fields our good drink, before yielding up their treasures of wealth, California will show one of the most productive years in fruits, grains and vegetables, ever yet known.

Farming, Horticultural and Industrial Club.

A movement preliminary to the organization of a Club, having for its object the encouragement of agricultural, horticultural and kindred industries, was made by several gentlemen of Oakland on Saturday last, meeting at the residence of Prof. Carr and discussing the subjects connected with the development of the above named industries, and the formation of a society.

A temporary organization was effected by electing Prof. E. S. Carr, President, and A. T. Dewey, Secretary. The following gentlemen were appointed a committee to report a plan of organization for an industrial Club for farmers, horticulturists and others: J. V. Webster, Brooklyn; R. H. Magill, Alameda; C. W. Howard, J. Ross Browne, C. Bagge, John Ross, Geo. B. Bailey, A. D. Pryall and A. T. Dewey, Oakland. The next meeting of the Club will be held at the chemical lecture room of the University on Friday evening at half past seven, for the purpose of completing the organization, the arranging of subjects for discussion, and listening to interesting remarks from Prof. Carr and others.

THE REFUSE OF GRAPES.—In Europe the refuse of grapes, from wine manufacture is utilized in the following manner: The refuse is first buried in a trench, covered with boards, on which stones are laid. After some time the must is taken up and treated with boiling water, which extracts almost all the argol—crude tartar, which will not dissolve in wine—in the must, the press cake is then dried and placed in the retort for gas making.

The gas evolved is said to give a higher illuminating power than ordinary coal gas, while the coke, quenched with water, may be used as a coal, for filtering or to prepare "Frankfort black." The water used for quenching the coke may be evaporated, and from it a good quality of potash obtained. To prepare the "Frankfort black" the coke is treated with cold concentrated hydrochloric acid, and then washed with water. The substances thus dissolved out of it form an exceedingly rich fertilizing material.

DETERIORATION OF WHEAT LANDS.—Russia seems to be following in the footsteps of this country in the neglect of her wheat lands, and, as a consequence, complaints are already being made that the average yield of her grain crops is constantly growing less. It is said that there, as in California, valuable farm yard manure is, in many places, being conducted to the nearest waste ground or stream as a nuisance. Still, Russia is buying largely of reaping and threshing machines, notwithstanding, as well as other agricultural machinery, on a large scale.

TWENTY-FIVE MILLION of dollars has been appropriated by the city of Birmingham, Eng., to establish a system of sewage.

Alkaline Fertilizers.

The following article we reprint from the "Practical Farmer," as showing the efforts being made to procure a potash—as it is called—as a fertilizer to the exhausted soils of the east; it having been proven satisfactorily that its presence in the soil is a remedy for diseases of fruit trees which heretofore have baffled the efforts of horticulturists to find a remedy. From the analysis given, it will be seen that its composition differs but in the slightest degree from the analysis of several of the alkalines found so common in many California soils, and which is doubtless the reason why our fruits are so perfect and why the soil will for ages, perhaps, continue to contain enough of these fertilizers to ensure the same wonderful superiority over the fruits of other climes and soils.

Potash as a Fertilizer.

In the *Practical Farmer* a few months since, we published a paper read before the American Philosophical Society, by Prof. Geo. B. Wood, of this city, on the value of potash as a restorative of decaying or unhealthy fruit trees, and also as a renovator of exhausted soils. This essay attracted much attention all over the country, and we have had more inquiries and letters on the subject than any other article we ever published. One of our friends has since tried potash on some Seckel pear trees, which bore small and defective fruit—and another on peach trees affected with the yellows. In both cases the effects were most striking, the trees being restored to health, and the fruit to the finest quality. Dr. Wood's own experiments in fruit trees with potash has also been thorough and entirely satisfactory.

These experiments suggested the importance of potash in another direction, as a general fertilizer of the soil, especially in cases where there had been long continued cultivation of our main cereal crops. The ashes of wheat stalks, potato stems, and indeed of nearly all our staple crops, contain a large percentage of potassa, which has been carried off from the land by continued cropping. While the importance of these facts has been admitted, there seemed no source of supply of potash but ashes, which of course could not be obtained in sufficient quantities for general use. We are pleased now to inform our readers, that what appears to be an almost inexhaustible supply of potash, has been discovered at the potash salt mines of Stassfurt, in Prussia, and which is offered at very low figures—far below any other fertilizer in the market. The benefit to our agricultural interests of this discovery may be almost incalculable. In our advertising columns it will be observed that Mr. Grange, Baltimore, Md., is the general agent for the United States.

The article, as dug out of the Stassfurt mines, is called "German Kainit,—Dung salt, or Potash salt." It contains, besides potash, other elements essential to the growth of tobacco, corn, hops, clover, potatoes, grass, vines, fruit trees, asparagus, and root crops of all kinds. It is offered at \$14 per ton, in bags, exclusive of freight, which will be four or five dollars per ton, delivered in Baltimore.

There appears to be three grades of Kainit, differing somewhat in their proportion of potash. Kainit No. 2, offered at the above price, contains,

26 to 28 per cent.	Sulphate of potash;
14 to 18 "	" of magnesia;
35 to 40 "	Chloride of sodium;
10 to 12 "	Sulphate of lime;
4 to 5 "	Chloride of magnesium.

To bring the Kainit to this port (Philadelphia) on the very lowest terms, it will be necessary for our farmers to club together, so as to have a vessel loaded at Hamburg with 400 to 500 tons, which would reduce the freight and other expenses. We will act as agents for such associations of farmers, or they can order direct of Wm. Grange; 20,000 tons have been contracted for in England. We shall refer to this subject again.

EARLY AND LATE POTATOES.—We are asked which is the best early as well as the best late potato to grow in California, for table use.

We unhesitatingly give the preference to the Early Rose as the best early potato. When we take into consideration its fine flavor, its fairness, good size and uniform good yield, we think it has no superior. For seed it can be procured in quantity in this city.

Among the best late potatoes—of the new varieties being introduced—the Peerless has no rival. It is faultless in form, excellent flavor, and yields equal to any of the superior kinds, and is the best late keeping potato known. The Peach Blow is esteemed among the best of late potatoes, but in the same soil, with the same cultivation, it has never come up to the Peerless; still, it should not be discarded from the list of best sorts.

The Cabbage Family.

We present our readers in the illustration here given, the peculiar characteristics that pertain to 5 varieties of the exceedingly numerous cabbage family. In buying this vegetable at the markets we often meet with heads of very different degrees of solidity and generally attribute the softness of some to an imperfection or lack of maturity in their growth. This is perhaps sometimes the case, but there are certain well known varieties that never produce solid heads, and yet are among the best sorts grown for certain culinary purposes.

The engraving No. 1, represents the Early Dwarf York, a small but very early variety and is highly esteemed among eastern gardeners. It is quite distinct from the York or Large York, but no better than the latter sorts except in regard to earlier maturity.

No. 2, is the Filderkraut, and though comparatively a new variety, has become the general "crout," or "kraut" of Germany. The seed was first imported by James Vick the well known florist and seedsman of Rochester, N. Y., at the instance of several of his German customers, who could vouch for its superiority over other kinds for the purpose indicated.

No. 3, is the Early Wakefield, the great favorite with market gardeners for the New York market; is considered the earliest variety known, and is sure to head.

No. 4, is the Drumhead Savoy, one of the very best fall and winter cabbages. It is not



as large as some other sorts, but is sure to give a firm head, fully matured in time for packing away for winter use.

No. 5, is known as the Premium Flat Dutch, a variety remarkable for its keeping quality, being easily kept over the winter without an indication of decay. It is a highly esteemed and valuable variety wherever propagated.

IMPORTANCE OF A PAPER.—The business men of Corrinne recognizing the importance of a local newspaper, have, in a body, waited on Judge Toohy, editor of the *Corrinne Reporter*, and offered him a bonus of \$5,000 to continue the publication of his paper at that place, and not publish the *Gentle Sun* at Salt Lake City. The proposition was accepted and the *Reporter* appears again. It is the old *Gentle* paper of Utah. The population of small places seldom properly appreciate the benefit done by a local paper and do not often discover its importance to the community which it represents, even after it has suspended. The people of Corrinne furnish a refreshing exception to this rule and we are glad to see that their intelligence has led them to take the prompt steps which they have in keeping their paper. Newspapers are a necessity of the age, and a town that does not rejoice in the possession of at least one, is seldom worthy of being placed on the maps. We could cite a score of towns on this Coast that are well and favorably known through the marked enterprise of their local journals, and as many more towns without newspaper representations that have equal natural advantages but are seldom heard of. The local press stimulates enterprise and sustains in many towns associations for improvement that it would be impossible to keep alive without its enlivening influence.

Look to Your Orchards.

If there are any, who thinking to gain a year in growth, have planted out young orchards in their wheat or barley fields, they should be careful to keep down all manner of growth, be it grain, grass or weeds, to a distance of at least 3 feet all around the trees. It is bad enough that the tree is to be subjected to the intense reflected heat of the bright and glowing stubble from the day of harvest till the October rains cool the heated air and moisten the baked earth, without allowing the thousands of little roots of grain and grasses to suck out the "lion's share" of the soil's moisture directly over the roots of the young tree.

It is a mistake always to plant out young orchards in grain fields, or in fields of the cultivated grasses; but there are certain crops that can be planted among such trees with but little injury to them. Among these are potatoes and the root crops generally; but even these should not be allowed to extract the moisture from nearer than 3 feet. All the melon family, with squashes and pumpkins, are well adapted to the orchard ground, because the few hills of the same can always be placed quite away from the trees, and yet all the ground be made equally available; in fact, the growing vines with their broad leaves help to shade the ground close to the body of the trees, and are nearly equal to a mulching of the surface.

But there are certain plants that are particularly injurious, and yet they are often grown

Artificial Incubation.

We want to hear from some one who is or has been successful in hatching eggs by artificial means. Almost every year we hear of some new machine or invention that is to entirely supersede biddy in her efforts to propagate her species; but all attempts seem to end where they begin, and nothing but partial success seems to be attained. In a season like the present, when eggs are plentiful and cheap in all the markets, and chickens for breeding, two-thirds grown, are worth at retail from \$1 to \$1.25 each, it would seem as though the present was just the time to set the patent incubators and egg-hatching machines in full blast.

In other countries, and particularly in Egypt and along the shores of Mediterranean Italy, artificial incubation is extensively and successfully practiced, and we cannot understand why it may not be as effectually done here as there. It would enable the hen to devote her whole energy and time to the production of eggs, much to her health and happiness, we should think, for the 21 days of natural incubation can be hardly less than days of set-lead doubt and uncertainty; which to a sensitive mind like that of a hen's, usually results in a withered state of the corporeal body; which would be entirely prevented by artificial incubation and the bringing up of the young chicks under artificial hens. We would like to hear of any success that may attend the artificial hatching process in this State.

Parlor Plants.

Many, whose tastes incline them to the culture and care of house plants, find with all the care they can bestow upon their pets, they will dwindle away to mere weakly things. The cause of this, in many cases, is a superabundance of moisture, the poor plants are suffocated, drowned by too much watering. As a rule, water should never be allowed to stand in the saucer. It is not used by florists to keep the bottom of the rootlets soaked in water, but to catch any that may drip from the drainage within; hence the mistake of many inexperienced house-plant keepers.

Another cause is from watering plants with cold water. Water for any description of plants, indoors or out, should be warm, and if the temperature is up to 140 deg. F., it is all the better; and plants that are found apparently perishing, can be oftentimes brought back to perfect luxuriance by using water at a temperature gradually increasing from 100 to 150 deg. F.; it can even be carried as high as 170 deg. F. in many cases with manifest benefit to the plants, and the extirpation of the plant louse and red spider. When plants want water give them a thorough drenching, and then give them five or six days time to breathe; but not be constantly dribbling them with small quantities daily, it is not nature's way of doing this thing.

WOOD'S HARVESTING MACHINES, manufactured by the Walter A. Wood's Mowing and Reaping Machine Company, Hoosick Falls, N. Y., have been before the public for over nineteen years, being among the first introduced on this coast, since which time they have been much improved. The steady and increasing demand for these machines is one of the best evidences that can be adduced as to their merit—152,000 of them having been sold since 1853.

WOOD'S SELF-RAKER, REAPER AND MOWER ATTACHMENT has received, as we learn from the annual circular of the company, more than 400 first-class county, district and State prizes; one of the best and most satisfactory tests having been made at Owatonna, Minn., in 1871, under the auspices of the State Agricultural Society. Among the reasons for giving the Wood the highest premium on that occasion the judges assigned the following: "That while really only one machine, practically it is two separate and almost distinct machines, the mowing attachment being a complete jointed bar mower, except the seat, pole and hounds, which are taken from the reaper; therefore, the mowing parts being entirely at rest when the reaper is in operation, and when the mover is at work the reaper gear is at rest, thus saving about half the wear and tear of combined machine proper."

The Pacific Coast Branch Office is at 112 and 114 Front Street, in this city, and is under the management of Mr. E. S. Whitcomb, who fills all orders on the same terms as the General Office in New York.

SOAP ROOT.—B. S. Conrad, of Livermore, Alameda Co., wants to know if there is any market for soap root, anywhere in this State.

NAPA MANUFACTURES.—We learn that a felt factory has been established at Napa, employing some thirty men in all its departments, of which, all but 6 or 8, are Chinese. The company purchases hides of every description, and are tanning large numbers of sheep and goat skins, as many as 300 daily are often turned out, supplying the Pacific Glove Factory with kid glove material at the rate of 240 skins per week. The company obtains large numbers of deer skins from the northwest coast, and already export the same in a finished condition to England. Manufactures always tend to increase the population of towns and cities, and hence we say success to the enterprise.

A COMPLIMENT.—W. H. Bruckner, author of "American Manures and Farmers' and Planters' Guide," Monroe, Michigan, writes: While in Philadelphia, I frequently heard the *Scientific Press*, of San Francisco, lauded by scientific men who had lived in California. I am pleased to bear witness to the truthfulness of their statements. The journal (and *Pacific Rural Press*) reflect no little credit on the publishers.



Birthdays:

Oh, who has not turned, with a heart that burned,
Away from the light, and said:
"I cannot be gay nor happy to-day,
"Tis the birthday of the dead."

And perchance we look at a half-worn book,
And think of a girlish face,
That has passed away, frail, beautiful clay,
To its last dark resting place.

And the tears fall fast, as we think of the past,
Of the kind, gentle ways we miss,
Of the lips held up, like the woodbine cup,
To welcome the birthday kiss.

Or perhaps it may be a baby we see,
And the kisses fall like dew,
Fast and light, on the forehead white,
Though the years are but short and few.

'Tis her birthday now, and our hearts we bow,
And stifle the grief in vain,
As we look on a shoe with the toe worn thro',
That will never be worn again.

But 'tis harder to bear, when silver hair
And a mother's face we miss,
And know that no more, on this earthly shore,
We may give her the birthday kiss.

And we do not think, as we stoop to drink,
Of the beaker upheld by woe, [Day,
That they've passed away, thro' the gates of
And gone where we all may go.

Oh, father and mother; oh, sister and brother,
Though we strive to forget the pain,
It all comes back, thro' its fiery track,
When your birthdays come again.

Science at Home.

Within the last half century science has been brought to the comprehension of the common people to an extent ten times greater than in all the world's previous history. A century ago chemistry and physiology, the great sciences of sentient and insentient being, were very little understood by learned men, and to the common people they were very much like the sought-for *terra incognita* of the North Pole—cold and unknown.

The knowledge at present possessed by the common people, however, on these great subjects is very limited, shamefully so, because most men and women have not taken the trouble to learn something of the house they live in, of the chemistry of the food they eat, the air they breathe—something of the necessity of learning these laws and adopting themselves to them. But scholarly men have, to a greater extent than is desirable or commendable, shown a tendency to make their knowledge an occasion of exclusiveness. The doctor has kept his physiology to himself, and regarded his associates as a kind of guild who carried the sacred trust of physical science to be used as a means of mysterious distinction and elevation and as a source of profit; and the chemist has in his laboratory, with "No Admittance" over the door, been experimenting for his own profit and honor, forgetting that great philanthropic law expressed in the Scripture words, "There is that scattereth and yet increaseth, and there is that withholdeth more than is meet, but it tendeth to poverty."

We believe that learning in every department should be diffused widely and liberally. He who has learned the way to happiness and Heaven should not hide his light from the masses; he who is learned in the law should teach the public justice; he who is learned in physiology should explain to the masses the way to retain health or acquire it when lost. A general diffusion of knowledge on this subject would not make physicians unnecessary. It might lessen the number and raise the standard of those who were left; but we believe that no man more willingly pays a physician for his advice and attendance than he who is largely conversant with the laws of his own constitution. And he who has some knowledge of the law, if he has occasion for legal advice, will willingly seek and pay for that advice; but he does not go to a fourth-rate lawyer. If he seeks for an opinion he seeks for a good one, and respects it and pays for it.

The science of mind has been wrapped up, like an Egyptian mummy, within the antique folds of mystical names—names so

unmeaning, or so uncertain in meaning, that few besides those who invented and used the names could understand their signification, rendering the witty Scotchman's explanation nearer the truth than is generally supposed. Being asked, "What is metaphysics?" he replied, "When the man spoken to dinna ken what the man speaking means, and the man speaking dinna ken exactly what he means himself, that is metaphysics."—*Phrenological Journal*.

The Dove and the Child—A Story of St. Petersburg.

The river Neva, on the banks of which St. Petersburg is built, often rises suddenly on the breaking up of ice in the spring. Much peril consequently overtakes those whose homesteads are near enough to the river's banks to be endangered by the overwhelming force of the torrent, as well as by those floating blocks of ice, whose destructive power is irresistible. In one of the small tenements on the lower banks of the river dwelt a lovely, fair-haired girl, about nine years of age, her parents being workers in hemp and flax. The child's greatest treasure on earth was a beautiful little dove, rescued from the hands of the destroyer, who had rudely torn away the parent bird from the nest; thus it had been nestled in her bosom, and fed from her lips, and they became almost inseparable companions, except when the little Hilda accompanied her parents to church, or to market with her homespun goods, when, for greater safety, the bird was suspended from the ceiling in its quaint wicker dwelling, to await, with a flutter of delight, the little maid's returning footsteps; then the door of the cage was thrown open, and the dove flew joyfully to its usual perch or resting place on Hilda's shoulder. Such, possibly, might have been their mutual position when the rush and roar of waters suddenly swept over their little dwelling, the force of the destructive element leaving no time for flight or escape in any shape. The child was soon seen struggling in the wild whirl of waters, while the dove, with expanded wings (which instinct would have taught her to use for flight and safety), hovered over her little protectress, fluttering around with inexpressible alarm, now perching on her head or breast when she rose on the surface, and with her little beak making vain efforts to rescue the floating locks of her silk-like hair borne backward and forward by the eddies of the torrent. When the fair young head was again engulfed, the dove plunged into the swelling waves after it, then rose with it again, until nature's struggles exhausted the loving little head, and the wet and weary wing sunk, never to rise again, in the overwhelming waters.

Value of Pictures in Rooms.

A room with pictures in it, and a room without pictures, differ by nearly as much as a room with windows and one without. Nothing, we think, is more melancholy, particularly to a person who has to pass much time in his room, than blank walls; for pictures are loopholes of escape to the soul, leading it to other scenes and other spheres. It is such an inexpressible relief to a person engaged in writing, or even reading, on looking up, to find his soul escaping, as it were, through the frames of an exquisite picture, to other beautiful and perhaps idyllic scenes; where the fancy for a moment may revel, refreshed and delighted. Is it winter in your world? Perhaps it is summer in the picture; what a charming momentary change and contrast! And thus pictures are consolers of loneliness; they are a sweet flattery to the soul; they are a relief to the jaded mind; they are windows to the imprisoned thought; they are books; they are histories and sermons, which we can read without the trouble of turning over the leaves.

THE MEMORY OF A MOTHER.—When temptation appears, and we are almost persuaded to do wrong, how often a mother's words of warning will be recalled to mind and the snare broken.—Yes, the memory of a good mother has saved many a poor mortal from going astray. Long grass may be growing over the hallowed spot where all her earthly remains repose. The dying leaves of autumn may be whirled over it, or the chill white mantle of winter cover it from sight, yet the spirit of her, when he walks in the right path, appears, and gently, sadly, mournfully, calls to him when wandering off into ways of crime.

Believing One's Own Eyes.

"Oh, but I saw it," says the positive man. But you may be mistaken after all. Here are two straight lines that we showed to a man the other day, and he insisted on it that one was longer than the other. "Can't I see?" said he, and not till I had measured them would he allow that both were of the same length. Perhaps you might be mistaken, as he was.

Now here is a row of ordinary letters and figures:

SSSSXXXZZZZZ 3333388888
At first sight a man might say the top and bottom of each were of the same size, but let him turn the paper upside down and he will see the difference.

Do not confide too much in your own eyes. Do you know every person has a blind spot in his vision? Here is a cross and a dot:

Close the eye and look steadily with the right at the cross on the paper, held a foot distant from you. Now move the paper slowly toward the eye which must be steadily fixed on the cross; at a certain point the dot will disappear, but as the paper is brought still closer it will come into view again.

Now sometimes a great fault in your character gets right under this dark spot and hides itself. You think that you see it but you do not.

The Humming-Bird.

Every one loves the beautiful, dainty little humming-bird. We look up with a thrill of pleasure when we hear the whirr of its wings as it passes the window. We follow its flight with our eyes to the garden-beds. There it levies a tax of honey upon each flower, and as it flits from one to another, looks very much like a flower with wings. But you must be content to admire it at a distance, for it is very timid, and easily put to flight.

Did you ever see a humming-bird's nest? It is very curious, and delicate in construction. It is usually fastened to the upper side of the branch of a tree, sometimes in the fork of a limb; and to guard its little dwelling from prying eyes, it covers the outside with pieces of moss, which makes it look like a knot in the wood. Who taught it to do this? The eggs are two in number, pure white, and about the size of peas. When the little birds are hatched they are no larger than flies, and are fed upon honey from flowers and small insects.

DARK DAYS have embittered the lives of many of us. They will dawn for us again. Days when we look yearningly into the far corners of the earth for a gleam of comfort, and look in vain; there is not a ray in the sunless sky, not a star in the black, overshadowing firmament. But above this dreary earth, higher than the leaden sky, is Heaven. There lives One who sees our cares, notes our oppressions, hears our sighs, pities our tears; and who will surely, in His own good time, cause the darkness to melt away in bright and loving light, if we do but patiently trust to Him.

FASHION ITEMS.—Ladies who have just returned from abroad report that large panniers have entirely gone out of fashion, and overskirts are made short and plain. They also report that the latest style of dressing the hair is in a simple coil at the back, and the front hair smoothed over the forehead and put back plainly behind the ears.

The most fashionable colors for evening dresses this season are maize colors and light pink, elaborately trimmed with Valenciennes or point lace.

THINK.—Do your own thinking. Yes, that is the idea. Think for yourself. It is well to listen to the expressed thoughts of others, and it is an agreeable pastime to give expression to your thoughts. But when alone, weigh what you have said. What you thus gain from surroundings, you will unwittingly transmit to the rising generation, and the result will be that you will do your share in elevating the human family.

MRS. SARAH J. HALE is still, in her 84th year, at work on *The Lady's Book*, with which she has been associated during half of her life.

A COUNTRY editor says that when he looks at a woman's head he is puzzled to tell which is switch.

YOUNG FOLKS' COLUMN.

Will You take A Sheep?

An old farmer about the time that the temperance reform was beginning to exert a healthful influence in the country, said to his hired man:

"Jonathan, I did not think to mention to you, when I hired you, that I think of trying to do my work this year without rum. How much more must I give you to induce you to do without?"

"Oh, I don't care much about it," said Jonathan, "You may give me what you please."

"Well," said the farmer, "I will give you a sheep in the fall, if you will do without."

"Agreed," said Jonathan.

The eldest son then said:

"Father, will you give me a sheep, too, if I do without rum?"

"Yes, Marshal, you shall have a sheep if you do without."

The youngest son, a stripling, then said: "Father, will you give me a sheep, if I will do without?"

"Yes, Chandler, you shall have a sheep if you will do without rum."

Presently Chandler spoke again.

"Father, hadn't you better take a sheep, too?"

"Taste and See."

A blind girl had been in the habit of reading her Bible by means of raised letters, such as are prepared for the use of the blind; but after a while, by working in a factory, the tips of her fingers became so calloused that she could no more by her hands read the precious promises. She cut off the tips of her fingers that her touch might be more sensitive; but still she failed with her hands to read the raised letters. In her sorrow she took the Bible and said, "Farewell, my dear Bible! You have been the joy of my heart!" Then she pressed the open page to her lips and kissed it, and as she did so she felt with her month the letters, "*The Gospel according to St. Mark*." "Thank God!" she said, "If I cannot read the Bible with my fingers, I can read it with my lips."

Oh! in that last hour when the world goes away from our grasp, press this precious gospel to our lips, that in that dying kiss we may taste the sweetness of the promise, "When thou passeth through the waters, I will be with thee; and through the rivers, they shall not overflow thee."

A LADY school-teacher in Omaha, having an inordinate dread of the small-pox, sent home a little girl because she said her mother was sick and had marks on her face. The next day the girl presented herself at the school-house, with her finger in her mouth, and her little bonnet swinging by the strings, and said to the teacher: "Miss—, we've got a loetle baby at our house; but mother told me to tell you that it isn't catchin'." The teacher said she was very glad, and told her pupil to take her seat.

BUILDING CHARACTER.—There is a structure which everybody is building, young and old, each one for himself. It is called *character*, and in every act of life is a stone. If day by day we be careful to build our lives with pure, noble, upright deeds, at the end will stand a fair temple, honored by God and man. But, as one leak will sink a ship, and one flaw breaks a chain, so one mean, dishonorable, untruthful act or word will forever leave its impression and work its influence on our character. Then, let the several deeds unite to form a day, and one by one the days grow into noble years, and the years, as they slowly pass, will rise at last a beautiful edifice, enduring forever to our praise.

Two little girls were gravely discussing the question of wearing ear-rings. One thought it wicked. The other was sure it could not be, for so many good people wear them. The other replied: "Well, I don't care; if it wasn't wicked, God would have made holes in our ears."

Boys and girls, did you ever think that you can ever catch the word that has once gone out of your lips? Once spoken, it is out of your reach; however hard you may try, you can never recall it.

A LITTLE girl in Hartford, whose mother promised to take her to see the Jubilee singers, wanted to go early so that she could hear the conundrums.

LEARN in childhood, if you can, that happiness is not outside, but inside. A good heart and a clear conscience bring happiness, which no riches and no circumstances alone ever do.

"Boys will be boys" is nonsense. Boys will be men if they live long enough.

DOMESTIC ECONOMY.

Poor Housekeepers Make Poor Servants.

"We have sold our house and gone to boarding, and I am once more at rest." This was said by a lady who had had a beautiful home, and a sufficient income to live delightfully, if she had only known how.

"I have been tormented to death with poor servants," said she, "and do not believe there is such a thing as a good cook to be found in all New York. I am tired enough of this country, and should like to go back to Paris, where we can live delightfully, and with so little trouble."

Ah! the trouble is not all with the servants, thought I. Ladies must know something of household matters themselves. A cook comes to you well recommended; but, perhaps, in her last place the lady preferred bakers' bread to home-made; never cared for a nice, wholesome soup, with the dinner, and chose to send to the bakers for her pies, rather than have them made in the house. Let your cook be ever so good, she must be in constant practice, else she will be liable to make some very annoying failures, if only at intervals of ten days, or a fortnight, she may be called upon to make an extra effort.

Then again, ladies do not consider how tastes vary in different families. A dish that is highly esteemed in one is utterly distasteful in another; and what to the cook and servants in the kitchen, may seem delicious, will not satisfy the more cultivated palate above stairs.

What ladies most need in housekeeping is patience and intelligent forbearance. Let a lady have discrimination enough to judge whether her servants, even if they have not her ways of doing their work, may not have the elements of good servants in them, and then let her know enough herself to instruct them into her own ideas of labor, and she may not only have good servants, but be able to keep them so.

Not every one realizes how much careful marketing has to do toward a well cooked meal. If the marketing is left to the servants, the servants leave it to the butcher, or grocer, and the best cook may work hard and intelligently and yet come far short of the success she might have attained, had good material been put into her hands.

Then the family often complain that their dinner is badly cooked, or unsatisfactory, for no earthly reason, save that the head of the house does not understand how to carve, and help to the best pieces.

An old servant once told me how, week after week, the roast beef would be sent down from the table, with the tenderloin all left for the servants, the gentleman, meanwhile, complaining daily, that they always had tough beef, simply because he did not know enough to turn over his piece of beef, and help himself to a tender slice.

A lady once complained, at dinner, that her fish was always soft, and never came to the table looking as it ought; and yet I could discover, at once, that the fish had been kept almost to a spoiled condition, and know that her cook had not suitable utensils to cook it in, so as to give her a chance to bring it, neatly, to the table.

Ah! ladies of New York, and of America generally, the fault is not wholly below stairs. Educate yourselves. Instead of writing long letters on what women are not permitted to do, learn, first, to do that which all allow, it is your duty to do. Understand fully your duty to your husbands, your children, and your servants, and having learned the lesson, do it well.

How to Cover a "Comfortable."

When the outsides of a comfortable or bed quilt have become tattered, if it is not so heavy that an extra covering will make it burdensome, it is a good plan to renew it in this fashion:

First, wash it as clean as possible. If it dries somewhat streaky no matter; that it shall be thoroughly sweetened is the main object; and no amount of exposure to the air or beating with a stick will accomplish this in the case of an old, long-used comfortable. Trim off the tatters of the old covering, have the new in readiness—good dark calico is the best thing—and tack it on in the way log-cabin patch work is done. That is, holding the quilt upon your lap or on a table front of you, commencing at the nearest edge, folding the cloth back toward you. Then baste or tack with strong thread the wrong side of the covering to the quilt, making the stitches short on the right side, and as long upon the wrong side as you think consistent. When you have gone the length of the quilt, go over another portion, say six or eight inches wide, and tack again. Just as you would make a block of log-cabin patch-work, only that the cloth is all in one piece instead of in strips, and no corners to be turned. When one side is finished, do the other in the same way.

When this covering becomes soiled, it can be in five minutes ripped from the quilt for the wash, while if elaborately knotted or quilted the tack becomes quite formidable.—*Western Farmer.*

RECIPE FOR WINTER MINCE PIE.—One pound of ready made sausage, seasoned, one pound of zante currants, one pound of raisins, small pint of syrup, three-fourths of a cup of vinegar, spice to taste. Put on the stove and boil ten minutes. This quantity makes six pies and is very little trouble to put together.

How to Carve.

On page 187 of volume II. we gave an article under the above head from the pen of Mrs. Henry Ward Beecher, but the following, from *Hearth and Home*, contains something farther, which will be found of interest to every one who desires to be able to carve well and easily, and without awkwardness:

Carving is a very desirable accomplishment for both ladies and gentlemen, and should be taught. One cannot learn it by tuition, but by practice, joined by a small slice of theory. It is true the French style of serving meat sliced is fast banishing the necessity of carving at the table of the rich; but in middle life, where such elegancies are not practiced, a knowledge of carving should be a part of a boy's or girl's education.

How often do we hear a person say: "Oh, excuse me, I can't carve; I never tried." Or, if it be attempted, one soon finds himself sadly embarrassed. He grasps the knife and fork desperately. He has learned that a slice of the breast of the turkey is a dainty; that a wing is good; the second joint also; that the leg is not so good. But it is not an easy task to separate them; and he thinks he would rather chop wood than cut turkey. He does not know that on the back lies a delicious morsel called the oyster, and the side bones below the second joint are considered titbits. This must be taught him.

Ladies ought especially to make carving a study; at their own homes the task often devolves upon them, and they should be able to perform it with ease, and not be forced to accept the assistance of visitors, who would probably dread the operation. The platter should be placed so near the carver that he has full control over it; if far off nothing can prevent an ungraceful appearance. A sharp knife is requisite, and a thin and well tempered blade.

In carving turkey, cut off the wing nearest to you first; then the leg and second joint; then slice the breast until a rounded piece appears; insert the knife between them and separate them—this part is the nicest bit of the breast; next comes the "merry thought."

After this, turn over the bird a little, and just below the breast you will find the oyster, which you separate as you did the inner breast. The side bone line beside the rump, and the desired morsel can be taken without separating the whole bone. Proceed the same with the other side. The fork need not be removed during the whole process. An experienced carver will dissect a fowl as easily as you can break an egg or cut a potato. He retains his seat, manages his hands and elbows artistically, and is perfectly at ease. There is no difficulty in the matter; it only requires knowledge and practice, and these should be taught in the family, each child taking his turn. Chickens and partridges are carved in the same way.

Taking Boiled Potatoes Out of the Kettle.

If there is one thing harder than another in preparing this indispensable article for the table it is taking a boiling hot kettle (covered or not) from the fire, and pouring the water out slowly, which cannot be accomplished without nearly or quite scalding the hand which holds the kettle; consequently the open air is usually better than in a close, dark corner of the kitchen; and it is well known that every house is not provided with a drain.

Imagine this process occupying at least four minutes in the cold or stifled air, steam rising and enveloping the whole form. One or two holders is requisite; then oftentimes the kettle, which is not of the best iron, is covered, replaced on the stove to stand from fifteen to thirty minutes, until the potatoes are saturated with rust or a taste of iron, and all in the bottom watery, having soaked up what it is impossible to turn off, or burned or blackened, making it necessary to throw one-third of them away.

To do away with all these objections have a long handle skimmer (which costs ten cents), and while the water is flopping place it on one side under all the potatoes it will hold at once and so on until all are removed into a convenient dish. The heat retained in the potatoes will make them perfectly dry and mealy while the steam is escaping. They should be eaten before they are done smoking.

To mash or jam them, skim out as we have shown into a tin-pan; place the pan on a flat surface; then mash (not pound), which will not hurt the pan or the potatoes, season and stir with a spoon.

The kettle is easily removed to cool, or with one stroke the boiling water may be turned into the slop pail. Try it.—*Ex.*

RICE CROQUETTES.—Take four ounces of rice and cook well in a pint of milk and the rind of half a lemon. Add more milk if needed to keep the rice covered. When done, mix with two tablespoonfuls of sugar, two ounces of butter, two tablespoonfuls of milk, yolks of three eggs, a pinch of salt and nutmeg if agreeable. Put back on the fire and stir for a minute. Spread out on a dish till cold. All this may be done the night before if wanted for breakfast. Then mix, shape, dip them in whites of eggs and bread crumbs and fry. You can cook the rice first place in water, by adding two tablespoonfuls of cream when ready to make croquettes of them.

TO KEEP KNIVES FROM RUSTING.—Scour them on a board, crosswise, with some dry brick, after having wiped them perfectly dry; and put them away without wiping off the brick dust.

Vinegar from Unripe Fruit.

Unripe fruit, especially apples and pears, as are well known, is much used in the manufacture of vinegar; but the process usually adopted is defective in many important points. We give below the substance of an article from *Granger's Manual of Vinegar Making*, which may, perhaps, serve a useful purpose. The principal fault of the old process consists in throwing away the pulp after the juices are expressed. As this, however, contains a large percentage of starch, excellently adapted for conversion into vinegar, it is necessary to prepare the fruit so as to save this portion of its substance. With this object it is to be grated, exactly as potatoes are prepared in the manufacture of starch, and the pulp passed through a moderately fine sieve, or through a coarse and open meshed cloth. There is thus nothing left behind but pomace proper, or cellulose, all the starchy matter having been passed through the sieve with the juice. This is next to be diluted with water, in proportion to the quantity of starchy matter thus obtained, and the whole is placed in a clean copper kettle, one or two per cent. of concentrated sulphuric acid being added, and heated long enough to transform the starch into grape sugar. The sulphuric acid is to be neutralized by means of carbonate of lime; the gypsum or sulphate of lime thus produced allowed to settle, and the liquid is to be left for fermentation to take place, with or without the use of yeast. A liquid having 8 to 10 per cent. of sugar can easily be made to have 4 or 5 per cent. of alcohol after fermentation, which, by its subsequent acidification, will yield a vinegar of 5 to 6 per cent. of acetic acid.

CUCUMBER SALAD.—Mrs. S. J. H. writes: We have just prepared our winter's supply of cucumber salad, and this is how we made it. There were about a dozen ripe "White Spine" cucumbers lying on their vines, and these we picked, washed, pared, cut into strips, taking out the seeds, and then to each dozen cucumbers—which we cut up into pieces like small dice—we put twelve large white onions, chopped, six large green peppers, also chopped one quarter pound each of black and white mustard seed, and a gill of celery seed. These were all mixed together, a teacup of salt added, and they were then hung up in a cotton bag to drain, for twenty-four hours. Then the salad, with enough clear cold vinegar added to cover it, was put into stone jars and fastened nearly air-tight. In six weeks it will be fit for use. We found this recipe in a old paper some years ago, and it has proved one of the nicest pickles we ever used. It looks 'as well as it tastes, so white and crisp, and makes an elegant salad for a joint of cold meat. It is not like the Spanish salad, that requires "a consoler for salt, a miser for vinegar, a spendthrift for oil, and a madman to stir it up," but it is quite as good in its way, and not very troublesome to make.—*Hearth and Home.*

Summer Beverages.

APPLE WATER.—Slice two large apples, put them into a jar, and pour over them one pint of boiling water. Cover close for an hour; pour off the fluid, and sweeten if necessary.

APPLE TEA.—Roast eight fine apples in the oven, or before the fire; put them in a jug with two spoonfuls of sugar, and pour over them a quart of boiling water. Let it stand one hour near the fire.

BEVERAGE OF FIGS AND APPLES.—Have two quarts of water boiling; split six figs, and cut two apples into six or eight slices each; boil the whole together twenty minutes; pour the liquid into a basin to cool, and pass through a sieve when it is ready for use. The figs and apples may be drained for eating with a little boiled rice.

COTTAGE CHEESE.—Boil two chickens till tender, take out all the bones, and chop the meat fine, season to your taste with salt, pepper and butter, pour in enough of the liquid they were boiled in to make it moist, put into whatever mold you wish, and when cold turn out and cut into slices. It is excellent.

BEAN SOUP.—Wash the beans and boil them with salt pork. When soft, take them out, and pass through the colander. Then put them back in the same water they were boiled in, with four hard boiled eggs cut in quarters, and a lemon sliced, and a little pepper if you like it. Boil again, and serve. This soup is very nice.

RECIPE FOR MOCK MINCE PIE.—One cup of raisins, one cup of currants, one cup of syrup, one cup of sugar, three-fourths of a cup of vinegar, one teaspoonful of allspice, one teaspoonful of cinnamon, three cups of water. Boil all together and when cool add three soda crackers rolled fine. This will make three pies.

QUICK CAKE.—Sieve three cups of flour, and add two teaspoons baking powder, a pinch of salt, one cup of sugar, three eggs well beaten, half a cup of butter, and sweet milk enough to make a moderately stiff batter. Bake twenty minutes in a good oven.

AN IMPROVED METHOD OF COOKING BEETS.—Bake them; it requires about two hours to bake a medium sized beet. I hardly think any person will resort to the old method of boiling them after eating one meal of baked beets.



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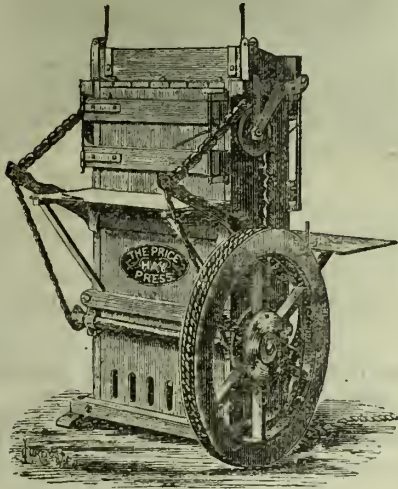
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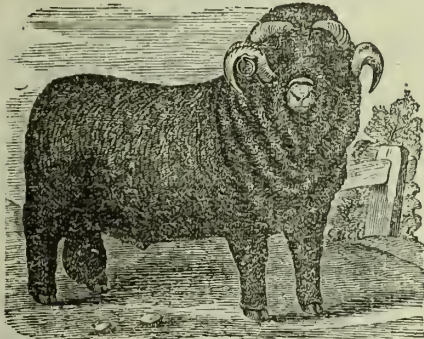
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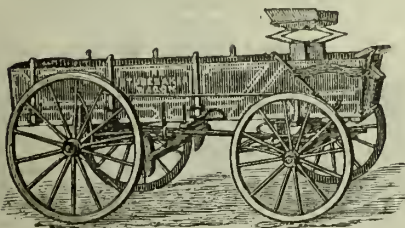
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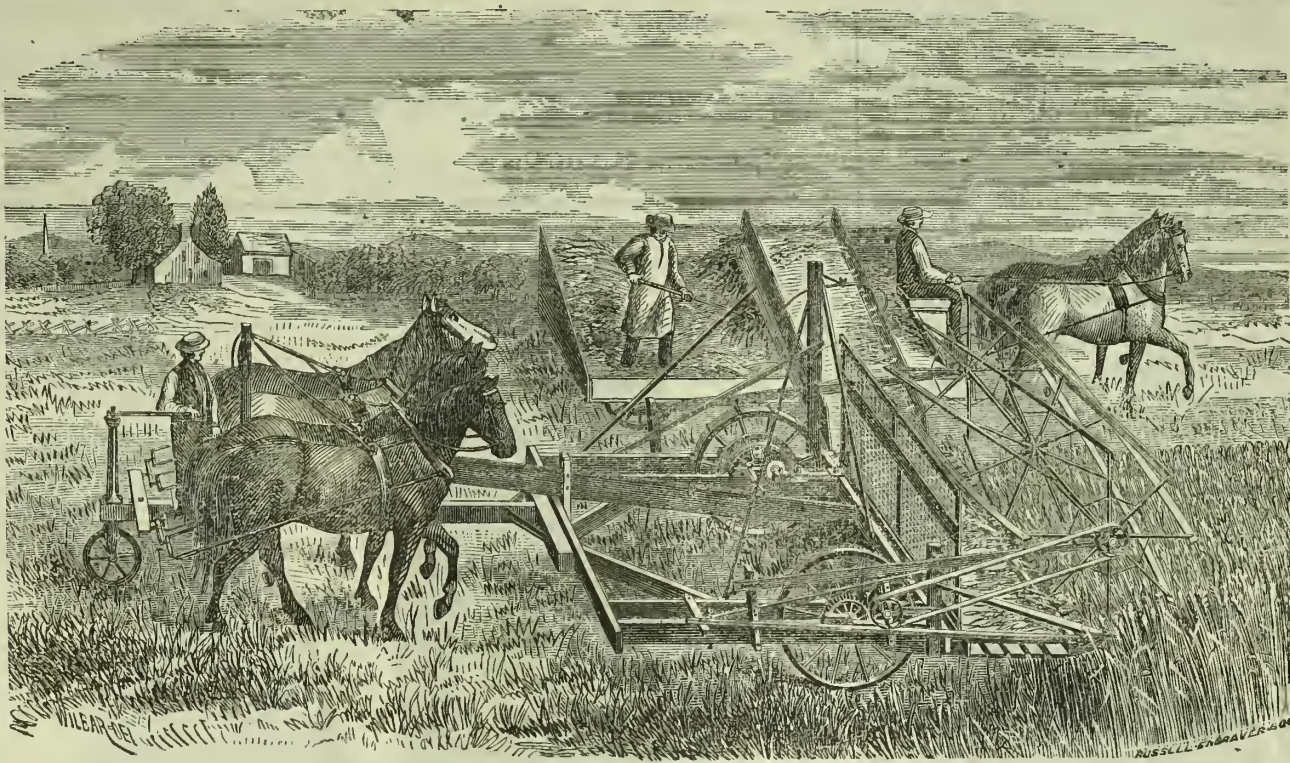
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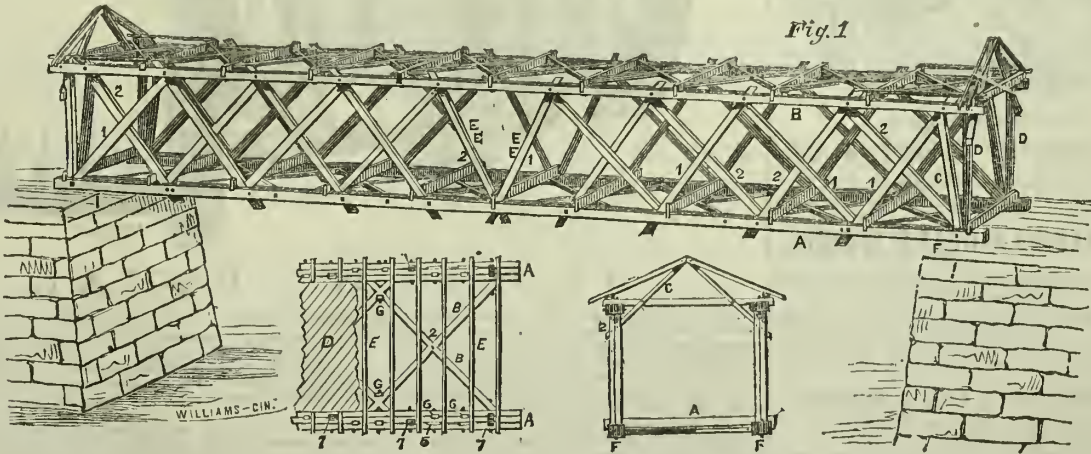
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This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

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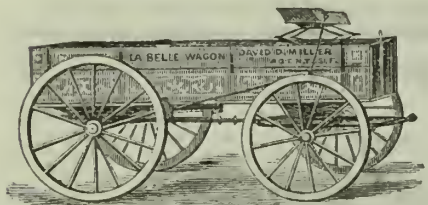
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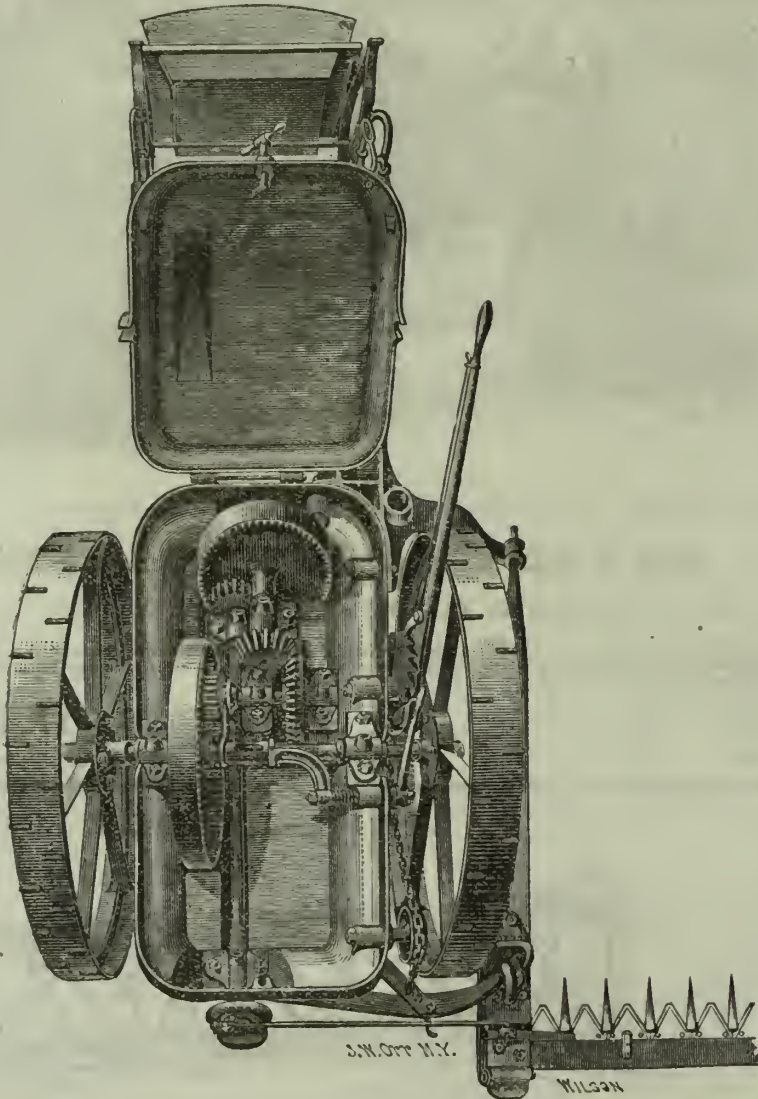
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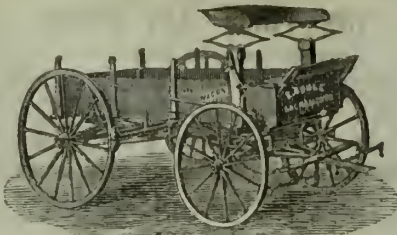
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[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump, of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents.—See official Report of the above Committee.]

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The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

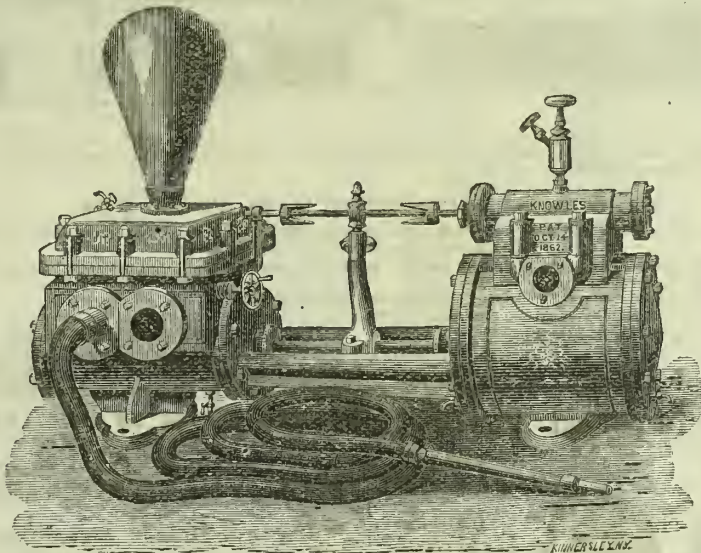
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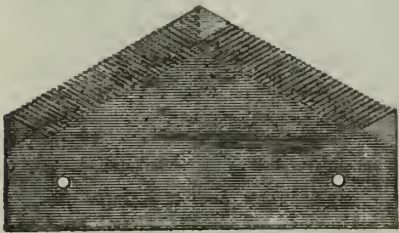
FOR THE HARVEST OF '72. INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers Kirby's mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

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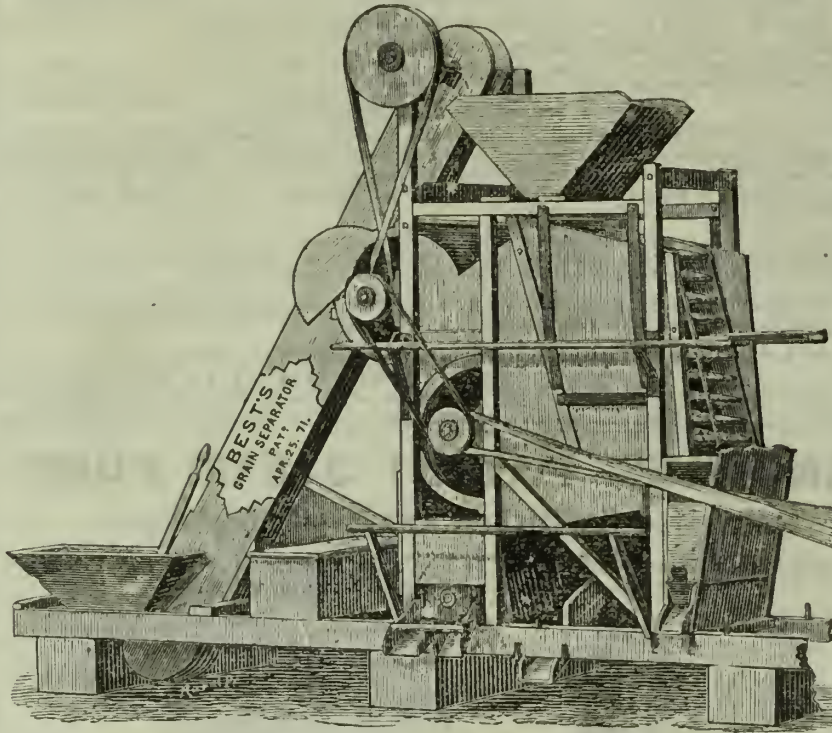
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Best & Brown's Unrivalled Seed Separator.

PATENTED APRIL 25, 1871.

We wish to call the attention of Farmers, Millers and Threshers to the great usefulness of this Machine.

We have sold in the last forty days about \$24,000 of Grain Separators and County Rights. The following counties have already been disposed of, viz: Colusa, Sutter, Yuba, Butte, Yolo, Jan Joaquin, Solano, Stanislaus, Alameda, Sonoma, Santa Clara, Santa Cruz and Monterey. These machines have been sold to parties who have seen them in operation and know that they will do all that is claimed for them.



It makes a perfect separation of Barley, Oats, Chess, Pink Seed, Kale and Mustard Seeds, and other impurities, from Wheat, rendering the foulest grain (either Wheat, Oats or Barley) perfectly clean and fit for seed at one operation—common hand mills are nowhere.

We Guaranty Every Machine to do Perfect Work

At the rate of Thirty to Sixty Tons a day. They can be conveniently attached to and run in combination with any threshing machine, and driven by the same power.

We wish it distinctly understood (and we mean all we say) that we clean grain that is too foul for the flouring mill separators, at one operation.

Light Horse Powers, adapted to driving the Separator, furnished to order.

State and County Rights for sale on reasonable terms.

For further particulars address

BEST & BROWN.

Manufacturers and Sole Proprietors of the Patent, Marysville, Cal.

Send for Circular.

(14v3-2am)

P. O. Box 206.

Fine Imported Poultry,

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Dark Brahmas,

LIGHT

Brahmas,

BUFF COCHIN,

PARTRIDGE

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AND

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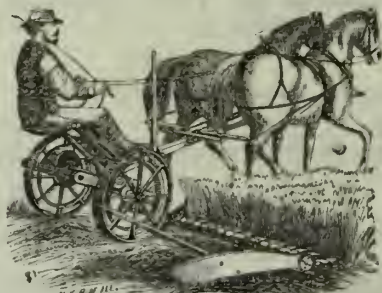


Guaranteed Pure, and bred direct from the finest imported stock in America.

EGGS

Of the above varieties for sale carefully packed. Poultry Yards at San Leandro, Alameda county, Cal Address W. FORD THOMAS, Custom House, SAN FRANCISCO.

WOOD'S MOWERS AND REAPERS.



THE WALTER A. WOOD

Mowing and Reaping Machine Co.

Will sell a First-Class MOWER, REAPER, or COMBINED MACHINE, for a Less Price than any other First-Class Machine is sold on this coast.

A Full Stock of Extras constantly on hand for all our Machines.

Also, all kinds of EXTRAS for Wood's Improved Haines' Header.

Branch Office, 112 and 114 Front street, San Francisco.

E. S. WHITCOMB,

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Pacific Oil and Lead Works, SAN FRANCISCO.

Manufacturers of

Linseed and Castor Oils, OIL Cakes and MEAL.

Highest price paid for Flax Seed and Castor Beans delivered at our works.

Office, 3 and 6 Front street. 3v3-cow-ly

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EGGS FOR HATCHING

FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums

At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains; DARK BRAHMAS, Imported from England and Ireland; HOUDANS, direct from France; LA FLECHE, direct from France; SILVER SPANGLED HAMBURGERS, (Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers; SILVER POLANDS, Non-Setters and Fine Layers; WHITE COCHINS, BUFF COCHINS, DUCK WINGED BANTAMS, GOLDEN SEABRIGHT BANTAMS, JAPANESE BANTAMS, HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Poulters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager, California Stock and Poultry Association.

OFFICE—No. 11 Leldesdorf street. YARDS—Cor. Laguna and Washington streets. 4v3-3m-16p

1857. SEEDS. 1872.

15 Years Established.

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8 and 10 J street. SACRAMENTO.

Garden, Flower, Field, Fruit, Tree and Shrub,

Grass and Clover Seeds, Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound. My annual catalogue is ready and will be forwarded on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

16v3-3m

W. R. STRONG, 8 and 10 J Street, Sacramento.

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

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GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry

Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

GEO. B. BAYLEY,

Importer and Breeder of

CHOICE POULTRY.

P. O. Box 659, San Francisco.

N. GILMORE,

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GOATS

—OF—

PURE BLOOD

—AND—

ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all parts of the State. For particulars address

N. GILMORE,

El Dorado, El Dorado county, California.

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GLEN FLORA

Stock Breeding Association.

Successors to C. C. & R. H. Parks, Waukegan, Ill. Organized under the laws of the State of Illinois.

Importers and Breeders of

SHORT-HORNED CATTLE

Thoroughbred and Trotting Horses, Cotswold Sheep, Improved Berkshires, and Pure-Bred Poultry in Great Varieties.

Stock of all kinds for sale at reasonable prices. Send for Catalogue giving full description. Address

C. C. PARKS, Pres't.,

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INDISPUTABLY THE BEST. The Wood's PRIZE Mowers

25,000 PRICE Sold Yearly \$110

Made by WALTER A. WOOD (the largest manufacturer of farming machinery in the world)—with FOLDING BAR, TWO WHEELS, and all late IMPROVEMENTS. It led the world at the Paris Exposition, and has found no peer since. IS COMPACT and POWERFUL, and JUST THE MACHINE FOR CALIFORNIA, as every farmer will say who has one. Sold by

TREADWELL & CO.,

14v3M Old Stand, Market street, San Francisco.

SPANISH MERINOS.—We offer for sale low, about 100 of our fine Thoroughbreds. Send for Catalogue. Orders solicited. (24-v2) JOHN SHELTON & SON, Moscow, N. Y.

PURCHASERS please say advertised in Pacific Rural Press.



Volume III.]

SAN FRANCISCO, SATURDAY, APRIL 27, 1872.

[Number 17.]

Ever-Blooming Borders.

It is said "there are tricks in trade," as connected with nearly every pursuit in life. Thus we find it among florists, or those who, having but a small, front dooryard inclosure, manage to keep it in perpetual bloom, to their own pleasure and delight, and oftentimes quite to the surprise and envy of their neighbors. It is a very easy matter, when you learn how they do it, and we propose to put you in a way of keeping that little plot of ground of yours, of only a few feet square, a perfect gem of floral beauty the year round.

First, get from a reliable seedsman a list of such flowers as will give you a succession of bloom from the earliest to the latest, and procure seeds of the same. We suppose that you have somewhere in the rear of your house a little space, secured by fence, which you can devote to the promotion of the object in view. Next procure a few strips of board, 6 inches wide, and cut up the same, so that when nailed together you will have any number you please of little boxes, 6 inches square and deep, each with a movable, unnailed bottom. Set these close together in the space in rear of your house, in the bottom of a trench 6 inches deep, each one on its own bottom, and fill up the same with the earth taken from the trench or other good garden soil. Continue the process until all your boxes are set and filled. Then the whole will be but a little above the former level of the ground, the boxes being covered level with the surface.

Plant your seeds and cultivate with care. Determine where upon your ground in front, you make your display of mound or bed or border of flowers, and prepare the ground, and plant the earliest flowering of all that you have upon it, and cultivate them till their bloom appears and begins to fade. By this time your next in point of season's bloom, in your reservoir of flowers behind the house, is ready to be brought forward. Remove the fading flowers and enough of the soil in the front yard plot to admit the box or boxes even with the surface. Bring forward, place in position and slide out the false bottom only; this allows the roots of the plants to penetrate deeper at once; cover all smooth and water freely.

Do this early in the evening, as it is but a few moment's work, and in the morning surprise your neighbors by an entirely new exhibit of beauty; and continue the process of removal as often as the flowers in the reservoir shall present greater beauty than those you have in your display grounds, and the deception, if it can be called such, is complete during the entire blooming season of summer and autumnal flowers.

Rotation of Crops.

Rotation is at least negative fertilization. It may not positively enrich a farm; it will at least retard and postpone its impoverishment. He who grows wheat after wheat, corn after corn, for twenty years, will need to emigrate before the term is fulfilled. The same farm cannot support—or endure—him longer than that. All our wheat-growing sections of years 50 ago are wheat-growing no longer; while England grows larger crops on the very fields that fed the armies of Saxon Harold and William the Conqueror. Rotation and lime fertilizers have preserved the latter, as the want of these have ruined the former.

H. GREELEY says, he finds that feeding hogs with corn in the ear, somewhat obstructs their hearing.

Clianthus Dampierii.

The *Clianthus* which we here illustrate is one of the few varieties of a genus of magnificent free-flowering green-house shrubs, in the latitudes of Boston, Philadelphia and Washington, but further south is sufficiently hardy as an outdoor grower. In the warmer valleys of California it proves perfectly hardy for outdoor

winged flowers, 3 inches in length, and singularly shaped, somewhat resembling the splendid blossoms of the Coral tree, each flower of the *dampierii* being singularly marked with a large, intense black spot or cloud, in the center or face of the flower.

Hovey & Co. pronounce it "one of the most magnificent flowers in cultivation." It is grown from seeds, and though a perennial in



CLIANTHUS DAMPIERII.

culture and is one of the most beautiful flowers that can adorn the parlor, green-house or lawn.

It is one of the recently introduced shrubs, and as yet, sports with us, but three varieties, the *clianthus magnificus* or glory pea—a beautiful scarlet flowering shrub with elegant foliage. The *clianthus puniceus*, also an elegant shrub with peculiar shaped and beautiful flowers, and will attain a height of 6 to 8 feet.

The *clianthus dampierii* which, through the kindness of E. E. Moore, seedsman of this city, we are enabled to illustrate, is the largest and most magnificent of the three varieties, often growing to a height of 10 and even 15 feet, and in their season presenting a profusion of drooping clusters of large, rich scarlet, long-petaled,

California, it produces flowers the first year, with an increasing profusion of floral beauty in grand rich clusters, as yearly it increases in size. No lawn or dooryard should be without it, if only for its magnificent foliage, and yet its chief glory is in its wonderful profusion of singularly marked and beautiful flowers.

SILK.—England is the most extensive European importer from China; Next, France. The price current from the Messrs. Wilkie & Robinson of Yokohama, recently received at the office of the California Silk Manufacturing Company, shows that England, within the period of the last circular dating March 23d, imported nearly 7,000 bales, France nearly 6,000 bales, while the United States imported within the same period only 55 bales.

Look to the Grafts.

If you had your orchard trees which produce but very ordinary fruit, grafted with the better sorts, either apple, pear, plum or cherry, the scions if properly set, and in good condition when set, will by this time be starting into leaf; they should therefore be examined, for in many cases it happens that the stock in which the scions are set, though apparently smooth of any limb or spur, may contain a large number of dormant buds, which, but for the cutting off of the limb above, would ever have remained so; but which now will be forced into growth.

It is important to the welfare of the scions and their rapid development, that all the shoots from the buds now forced into growth below and near the scions, should be rubbed off; we say rubbed, because they should be removed when it can be done quickly and smoothly by the hand and not wait till the new wood forms, requiring a knife and much more time to make the removal.

The same rule applies equally to grafts set in the nursery row; they should be examined and all superfluous shoots removed. With trees in which the last autumn budding failed to take, care should be had that they receive only a judicious pruning and not be denuded of their entire compliment of side limbs, with the view that many have, that it forces a more rapid upright growth.

There is no greater error in tree growing, than to suppose these side limbs are not wanted to the fullest development of the young tree. They not only add to the actual height of a summer's growth, but are the almost entire cause of a thickening up and strengthening of the whole body of the tree. Only the dead and dying limbs quite near the ground, and if a grafted tree, then a few of those near the graft should be removed till the trees are two or even three years old in many cases.

Destruction of Birds.

One of the most noticeable sights in the markets of Paris for many years has been the great number of stalls devoted to the sale of small birds—larks, finches, thrushes, sparrows and even nightingales—which are to be seen trussed and ready for the spit. The consequence is now being felt. A French paper notices the unusual devastations of the caterpillars and insects, which not only destroy the leaves and fruit, but bore into and destroy the trees. On the other hand, in England, where small birds are protected by law as well as by public sentiment, and sheltered and encouraged by the continuous hedge-rows, insects give very little trouble and occasion but few complaints. It is to be hoped that a public sentiment will be fostered and encouraged in America in favor of the birds, and that the constitutional privilege we, as well as our boys, enjoy, of bearing arms, will not have as one of its results the destruction of all our small birds, or even of the larger ones, such as crows, jays or owls.

Mould is indispensable in every soil, and a healthy supply can only be preserved through the cultivation of clover and the grasses, the turning in of green crops or by the application of composts rich in the elements of mould.

CHICAGO markets are well stocked with California vegetables, which command fancy prices.

It now takes only as many days to refine sugar, as it did months, 30 years ago.

CORRESPONDENCE.

Garden Seeds.

EDITORS PRESS:—In a late number of your valuable journal I saw an editorial article on the small quantity of garden seeds used on this coast of home growth.

Now I wish to give you my experience in this matter of home-grown seeds, and perhaps others have experienced the same difficulties I have. Generally, when I want a few papers of seeds, I have no difficulty to get a good article of either foreign or home raised; but when I want several pounds of beets, carrots, etc., I must take seed grown in the neighborhood, and find myself at the end of the year disappointed. Instead of pure Mangel Wurtzel, or sugar beets, I have a mixture of all sorts, and of only half the size expected from seed properly grown.

The trouble is just this: most farmers that have land suitable, raise more or less beets, carrots and turnips to feed their stock, and what is left over in the spring is allowed to go to seed, just as they were planted the spring before, paying no attention to size, shape or quality. This is repeated from year to year until they "run out." The surplus seed are carried to the nearest village and sold in the stores, to be re-sold to unsuspecting customers.

Now I think as you do, Mr. Editor, that this coast not only ought to raise seed enough for home use, but for export, and of the very best quality.

To remedy the evils I speak of, I think our seedsmen ought to give price lists in their catalogues, that we may send and get what we want by mail. Most Eastern seedsmen do this, and we can get our seeds by mail cheaper, with better assurance of purity, than we can to buy in the villages. Give us price list per paper, oz. and lb., by mail, and we will have no need to send "East" for our seeds.

Large or Small Trees.

I agree with "Nurseryman" that the almond, peach, apricot and plum ought to be at least one year old before transplanting in the orchard.

On the northern coast of this State I found by experience, that plum, cherry and pear at two, and apple at three years old was as good as younger trees. Almonds and peaches did not succeed there. I set out an orchard in the spring of 1859; my apple trees were two and three years old. The two year olds never caught up, though I was told they would. I could always notice the difference in their ages up to the time I left, which was nine years after.

The Weather.

We have had considerable north wind of late. Snow was visible on Mt. St. Helena yesterday, and to-day it is raining hard, the ground will be thoroughly soaked, which will be a God send to those vine growers who have not yet plowed their vineyards.

Jack Frost

Visited us one fine morning last week, and did a great deal of damage to the vineyards. Some will lose nearly all their crop, others one half to one fourth, and a few only slightly damaged, say 10 per cent. He was no respecter of soils, but was as destructive on the high table lands as on the low damp lands. Other crops are looking finely.

Scenery about St. Helena.

The scenery about St. Helena at all times lovely, is doubly so now. Spring is upon us in all its beauty. The grand old oaks that dot the valley everywhere, have put on their garbs of green. The waving grain; the green clad hills with clumps of evergreen trees and shrubs dotting their sides, makes up a picture not easily described. J. M.

St. Helena, Napa Co., April 16, 1872.

Fig Culture.

EDITORS RURAL.—Be kind enough to inform me how to propagate figs. I think that figs can be made to pay well if one goes into the business with enough trees of the proper kinds to make their drying and packing an object, worthy of giving time and attention thereto. We have less rain here in San Diego than in almost any other part of California, and field crops of grains and vegetables suffer more from want of rains than do all kinds of trees that root deeply. Hence my desire to cultivate fruit trees of such kinds that their fruits will pay to put up for purpose of shipment or export.

ONE MONTH IN CAL.

San Diego, April 20, 1872.

Fig trees are very easily grown from cuttings, when the simple extension of known varieties is the object; but when new varieties are desired recourse must be had to seeds, which require skill and nice management to make their growing a success. There are upwards of 40 varieties cultivated in Europe, and it is thought that the best can hardly be improved upon, hence propagation by cuttings is generally practiced.

Secure the cuttings any time in winter just

previous to the swelling of the buds, by taking the ends of limbs, shoots of the last season's growth with half an inch of the old or previous season's wood at the base of the cutting, and let them be from 6 to 12 inches in length. Set them two-thirds their length in good warm sandy loam, and keep them moderately moist for a month or more, after which they will require little or no attention, and will make a fine strong growth the first season. Some prefer transplanting to the orchard at one year, others prefer two-year-old trees. As a general rule, if the trees can be thoroughly protected from injury at all times, the younger trees can be set in their permanent quarters the better.

Cost Production and Value of Vineyards.

The closing article of the series of papers on vineyards and wine-making, appears in the *Overland Monthly* for May. As the writer is a practical wine-maker as well as viniculturist, his statements have the value of an authority on this branch of industry.

The average yield of an acre of vineyard is 400 gallons, and we will place the average value at only 30 cents per gallon. For 30 acres, then, we will have:

12,000 galls of wine, at 30 cents.....	\$3,600
600 galls of brandy, from lees of the wine and pressings, at 75 cents, without Federal tax.....	450
Total.....	\$4,050
Deduct expenses—	
Cultivation of vineyard, at \$15 per acre.....	\$450
Picking grapes and making wine, at 5 cents per gallon.....	600
Hauling lees to distillery and cost of distilling, at 25 cents per gallon of brandy.....	150
	—\$1,200
Net income.....	\$2,850

An income of \$2,850 from a working capital of \$14,000 amounts to a fraction over 20 per cent. per annum.

The writer states that within the last twelve months vineyards have been sold at prices ranging from \$250 to \$400 per acre.

The following estimate will give an average showing of the value of thirty acres of vineyard, together with improvements, and all apparatus necessary for wine-making:

Dwelling-house and furniture.....	\$2,000
Press-house and wine-vaults.....	1,600
Bar and outhouses.....	500
Horses, wagon, plows, etc.....	1,000
Casks, vats, presses, etc.....	2,000
Thirty acres vineyard, at 300.....	9,000
Total, complete.....	\$16,000

One-half the vines in this State are of the finer varieties, and much more valuable than the Mission grape. The estimated capital amount invested is covered by the following items:

The quantity produced being equal, and the wine made bring fifty per cent. more, the vines should be estimated fifty per cent. higher.	
15,000,000 Mission vines, at 40 cents.....	\$6,000,000
15,000,000 imported vines, at 60 cents.....	9,000,000
Improvements, seven months additional.....	11,666,666
Last vintage, 6,000,000 gallons wine, at 35 cents per gallon.....	2,100,000
200,000 gallons grape brandy, at \$1.50 per gallon.....	300,000
One-third of previous vintage, 1,000,000 gallons, still on hand, at 50 cents per gallon.....	500,000
Total amount invested.....	\$29,866,666

If to this we add the amount employed by the different wine merchants of the State in casks, stock on hand, etc., the sum would be increased over \$1,000,000, making the total valuation about \$31,000,000. And the future annual increase of the investment will probably not fall short of \$2,000,000, rather more than less.

The Use of Earthquakes.

The usefulness of earthquakes was a favorite subject with the late Sir John Herschel. Were it not for the changes in the earth's crust which are constantly being effected by the action of subterranean forces, of which the earthquake is the most active manifestation, there can be no doubt that the action of the sea beating upon the land, together with the denuding power of rain, would inevitably cover the entire earth with one vast ocean. "Had the primitive world been constructed as it now exists," says Sir John Herschel, "time enough has elapsed, and force enough directed to that end has been in activity, to have long ago destroyed every vestige of land." Mr. Proctor shows most clearly the beneficial manner in which the restorative action of the earth's subterranean forces is arranged. Of course, every upheaval of the surface must be either accompanied or followed by a depression elsewhere. "On a comparison of the various effects, it has been found that the force of upheaval acts (on the whole) more powerfully under continents, while the forces of depression act most powerfully (on the whole) under the bed of the ocean. It seems as if Nature had provided against the inroads of the ocean by seating the earth's upheaving forces just where they are wanted."—*Scientific American*.

AN APPROPRIATION of \$50,000 has been favorably reported on in Congress for the purpose of removing Rincon Rock, an obstruction in the harbor of San Francisco. The same action was taken in reference to the Wilmington break-water, at San Pedro, the port for Los Angeles, the amount being \$75,000. Both of these appropriations will be of great benefit to the harbors mentioned.

HOME AND FARM.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

Nearly all house-mothers who carry conscience into their business are ready listeners to the experience of others, and in the family paper nothing so surely attracts their attention as household hints and domestic receipts.

Noticing carefully for some years the general tone of directions and advice in all papers and magazines that have come before me, I have reason to believe that a slow but sure reform is taking place in domestic cookery among the sensible "middle class," who, as a general rule, will gladly feed both mind and body upon substantial food if they only know how to do it.

Let any memory go back 20 or 30 years and recall how little was found in the publications of those times to arouse the attention or ambition of the experienced housekeeper.

She had been to school—perhaps even to the Academy, and as she passed with nervous triumph through the final examination and was made to feel in a dim, flurried sort of way that this course of study (familiarly called "The Curriculum") had prepared her for the whole journey of life—would it have been cruel if one had whispered in her ear—"No, my dear; this is well enough in its way, but it is not what you will need the most. Solomon says: 'Wisdom is the principal thing, therefore get wisdom; and with all thy getting get understanding.' What does he mean by that? Something practical and of positive every-day use; something available in the homely, every-day struggle; something, if you please, that will make us healthier and therefore increase happiness and length of days."

For a woman I should say it means most decidedly a knowledge of herself as first in importance, and this she can only get as she lives along into it. Next a knowledge of food—how to prepare all sorts and what to expect from them; just what is best for mothers at all critical periods; what is best for children in the growing age—what is best for men and women in differing conditions of life, whether they labor with hands, with brain or with both; and then with change of climate—change of seasons—one should know without fussiness or affectation just what is necessary to keep up bodily health; and who but a woman will be wise enough, patient enough to attend these most important duties? Experience is a hard teacher, wasting and shortening life with disastrous blunders; and to begin right—"Ah, there was nobody to tell the bewildered young graduate how to begin right, and if there had been she would have blushed a little and declared half timidly, half scornfully:

"Mother understands cooking, but she don't want to make a drudge of me."

And so—Bold Young Whiskers walked up, offered his arm with a ravishing smile, and away they went in the "merry-go-round" of jollity and pleasure, bringing up after awhile among the sober realities of married life.

And now began the tussle with ignorance; now came the daily surprise of homely cares and duties, the daily perplexity of "How in the world did mother 'manage and make' so nicely, and never have trouble with things?" But mother was far away and there was no genial "Spirit of the Press" calling around every week to tell her how to make and bake all sorts of nice, plain things.

She had Mrs. Hale's cook book, but it always led her into scrapes and musses, and called for queer, outlandish things that she knew nothing about. It seemed to take for granted that everybody was rich—almost swimming in butter, and fairly running over with luxuries, servants and fat of the land generally, while she—brave heart—was trying to learn economy and give real help in the battle of life.

Don't we all look back pitifully upon the tender little hands—the poor little brain more tender and verdant still—the sad young eyes that hardly dare look up when company is at the table because "everything is so horrid! why, the biscuits are just like what Elder Tanzie calls 'death balls'; the meat tastes like chips; the pie is dough at bottom and black on top; the cake is dough in the middle, and husband is black as a thunder-cloud—trying to look polite and urge them to eat the wretched stuff that's just fit to kill every one of them! O, how miserable it is to be married and have such awful luck with things!"

Many a skilful, self-possessed matron of today can look back with a laugh at the comical side of her raw, young housekeeping; but she does not forget the heartache, the lonely crying and discouragement that attended her forced marches under that grim old tyrant, "General Experience." Neither does she forget the tragedies that went to the make up of those ignorant old days; the sickly habits that could hardly survive teething, and yielded to the first serious attack of disease, or the more serious dosing of the family physician who was not yet wise enough or unselfish enough to tell the young mother that sensible diet and care of herself would make wonderful and joyful difference in family results. She also remembers the cross, dyspeptic husband and wife who invested largely in pills and other patent abominations of physic. The more they took the more they had to take; and so with grievous griping and groaning they

helped to swell the revenue of Brandreth, Holloway, Wright and all the other monstrous pill vendors who reaped and still reap a rich harvest from the broad fields of human ignorance and credulity.

Reaped and still reap? Yes, we hear of whole cargoes of bitters and other nastiness going to and fro in the world "seeking out" the sick and afflicted "From Greenland's icy mountains to India's coral strand." We see their pious pomp of advertising, crowd the columns of all papers and magazines with the honorable exception of our leading scientific and agricultural journals that are trying to teach as fast as possible a far better way of living and dying than to surfeit upon concentrated, highly seasoned food and then turn for relief to the most violent physic.

Science is turning a steady light upon our every-day affairs; and from journals quite within the means of any industrious person, a careful woman may learn the wise and useful chemistry that enters into vital growth, builds up mind and matter, keeps it healthy, jolly, and finally, as a grand result, sends forth stalwart son and blooming, beautiful daughters to rejoice and rejuvenate a despairing, drugged and humbugged world that needs just such glorious proof as this to convince it of the "better way to live and die."

And what do I mean by that wonderful chemistry? Just plain, wholesome cookery and genuine, practical wisdom in everything that pertains to maternity and housekeeping. If I said cookery at first I knew the aspiring, progressive, feminine reader would throw down the paper and throw up her head with the cry—"Oh! Cookery! Drudgery! Bah! we women have had enough of that! Give us *real power*—scientific, medical, philosophical, legal, political, then will we show the astonished world what we are made for and what we can do!"

Having thus allowed the aspiring woman to have "her say," you may all imagine it has been said in loud, melodious tone, with dramatic effect as becometh one who "speaks in public on the stage." She turns from me in high disdain, and quite as readily I turn from her to the loving, faithful mothers of the land; and how I wish I could show them in one bright flash all the glory and beauty of their life-work. They have heard the cry that echoes through the world of—"Poor, enslaved, down-trodden woman!" "Poor, degraded, oppressed, disfranchised woman!" and I really hope it has not put to rout the content and happiness that heretofore blessed their homes, has not filled their hearts with such panic and dismay as tilted mine for a while, until, after a long and mighty struggle I broke through and began to see my way clear again.

This is such a terrible subject it makes me tremble even to point my pen towards it; but I know how farmers' wives read and think, and, like ancient Mary, ponder all these things in their hearts. Judging others by myself—perhaps many a one has felt want and sick under the weight of these modern questions—has been forced to drop rolling-pin or mop-handle in a hurry and sit down hilt crushed by the ever recurring—"Is it right? Is it duty? Ought we, most of us, to put our shoulders to the great wheel of public affairs?" It is duty, "whystand we here all the day idle?" "O, I wish we could be our grandmothers with all their sweet, old-fashioned serenity instead of this new-fangled grumbling and discontent!"

Again, like myself, many a farmer's wife who reads these columns has never had the pleasure of listening to public speaking of the feminine gender;—can never expect to go to the great centres of agitation where all these matters are coolly or hotly raked over and everybody's mind fearfully stirred about and then nicely "made up" and fixed all right and tight with preambles and resolutions.

But the great distracting problem reaches us, and in solitary hours we work away at it. Meanwhile the pot must be kept boiling; breakfast, dinners, suppers, must trundle smoothly along their appointed course, even though vexed souls are in awful suspense—uncertain whether we are to be presently turned loose as voters and all the rest of it, or let severely alone in the present disturbed "sphere," and further tossed and worried within an inch of our lives by the rampant spirit of the age.

This morning I sat down calm and composed to talk about crumpets and other good things to eat; but, as will sometimes happen in the most unpremeditated chat, I have been "took very bad" with women's rights.

Will some one please sing the good old camp-meeting hymn—

"What is this that casts you down?
What is this that grieves you?
Speak, and let the worst be known—
Speaking may relieve you."

Yes, the subject is near my heart—really hurts at times, and this may be my only chance for relief. So, Providence and Editors permitting, it will be—"continued in our next."

ILL FLAVORED EGGS.—A disagreeable flavor is often imparted to eggs by the food eaten by the hen. Such flavors are usually produced by plants of some sort; peas and beans sometimes produce a rank flavor. The difference between the eggs of ducks which are allowed to run on soft or other marshy ground and those kept confined to a close yard is remarkable. The latter can scarcely be detected, by taste, from the eggs of a well-fed hen. Calcined oyster shells are said to be sometimes a preventive to bad flavor in hens' eggs, when the fowls are allowed to feed on wild herbage.

MECHANICAL PROGRESS.

The Physical Properties of Steel.

What is steel? This is a point which has been much discussed, but one upon which no conclusion has been reached, chiefly from the fact that the meaning of the word has never been clearly defined. We have the series—pig-iron, steel and wrought-iron; but the exact limits of steel have never yet been defined. The province of steel is sometimes enlarged, sometimes unreasonably circumscribed. In its properties and in its manufacture it is comprised between the limits of cast and wrought-iron—but when it begins or when it ends has never been defined. We condense the following from a work recently published by M. L. Graner, of the Paris School of Mines:—

The elements which enter into the iron in its conversion to steel are quite various, and of such slight proportions, in relation to the mass of iron, that even their exact determinations are difficult. These uncertainties render it extremely difficult, if not impossible, to produce two specimens of steel exactly alike. The same difficulties, indeed render it equally difficult to prescribe the exact limits of the composition of cast and wrought-iron.

The same foreign elements are found in cast-iron, steel and wrought-iron—the difference between the different members of the series is due solely to varying relative proportions, and chiefly to the single element of carbon. In each instance this element is found partly in merely mechanical mixture and partly in intimate combination or rather solution.

The large influence which carbon exerts on iron may be inferred from the fact that when iron is in a certain condition it requires only a few tenths of one per cent. to so modify it as to cause the iron to pass into that which is unqualifiedly steel. Indeed Rivet appears to think that the two are chemically identical—that steel is a mere change in the molecular constitution of iron.

There are certain ores known as "ores of steel," which naturally produce steel at a certain stage of refining, but which by still farther refining pass into iron. Again this same iron gives steel of a superior quality or cementation.

All metals, in fact, undergo remarkable changes through the influence of exceedingly small proportions of various foreign substances. Copper is partly modified by the merest trace of oxygen, sulphur or lead, zinc and tin by only a few tenths of one per cent. of iron; gold, according to Fremy, is rendered as brittle as antimony by one one-hundredth of one per cent. of lead or bismuth.

According to Fremy nitrogen exercises an important influence on iron—that steel is due not to the presence of carbon alone, but to a combination of iron with *nitrocarburets*. Careful analysis, however, shows that there is no fixed relation between the properties of nitrogen and carbon in either steel or iron—and that the proportions of nitrogen are found to vary, while those of carbon are more constant. Hence it has been supposed that the presence of the former is more or less accidental and unimportant.

Analysis shows that crude wrought-iron retains a part of all the elements present at the reduction of the ore in the blast furnace, and when steel is obtained from iron by refining, only those elements are completely eliminated which are readily oxidized, and here only a slight affinity for iron. Among those thus retained in greater or less proportions are carbon, aluminum, sulphur, phosphorus, silicon and copper.

In reality, steel and wrought-iron are compounds almost as complex as the crude pig which comes from the furnace—the proportions only are less. The proportions of carbon in that metal have no absolute value as regards its tempering power or the facility with which it may be drawn out.

All the carbon in white irons and tempered steel is really combined or held in solution, while in gray iron and steel not tempered, a portion of the carbon remains deposited in the form of graphite.

NEW STUFFING FOR CUSHIONS.—A material which has come quite extensively into use in Germany, as a substitute for hair in the stuffing of saddles, etc., consists of a mixture of flax seed and tallow. The advantage of this substitute consists primarily in the fact that the mobility of the seeds, one upon the other, prevents the packing or settling in any particular place, as often happens in saddles stuffed with hair, thus causing any given pressure to be readily and uniformly distributed over any given surface. The tallow serves the purpose, too, of keeping the leather flexible, and of preventing the absorption of perspiration, protects the article itself, and prevents the back of the animal from becoming galled. Animals with sores or galled spots on the back can be ridden with saddles stuffed with this material without any great inconvenience. The tallow also has the effect of preventing the rotting of the flax seed, and is to be added in sufficient quantity to give the requisite softness to the entire mass. An aromatic odor can be imparted by introducing oil of turpentine or camphor powder, and the durability considerably increased thereby. One part of tallow to from six to ten parts of flax seed may be used, according to the temperature.

Band-saws for Cutting Large Timber.

The substitution of the band saw, for the old style of reciprocating gig-saw, has produced in many kinds of wood working a decided revolution in the greater speed with which the work may be performed. But few would suppose that the same principle could be adopted to advantage in sawing large logs from the forests. This, however, has been done, and sawing machines constructed on this principle, capable of sawing stuff forty-eight feet in length, are for sale by firms located both in Philadelphia and London. We do not know that these have yet been used to an extent warranting the belief that they will prove more useful for ordinary sawmill work, or for sawing timber which two circular saws, one above the other, are found capable of cutting into plank; but for various special purposes, like the shaping of ship timber and many others, this adaptation of the band-saw seems to possess much merit, and will doubtless meet with extended favor, and may possibly admit of modifications in its structure now unthought of.

As concerns the proportions of the machine as made for heavy sawing, we find the diameter of the wheels over which the saw passes stated at six feet. These wheels are of wrought iron, and are tightened against the saw to a tension of from two and one-half to ten tons, the uppermost wheel being vertically adjustable a distance of twenty inches, and having its shaft, four inches in diameter, of steel. The shaft of the lower wheel is of wrought iron and is half an inch greater in diameter, and the journal boxes of both are lined with hard brass. The log carriage is commonly made with especial reference to the variety of work for which the machine is designed, and of course varies according to circumstances. For resawing, feed rolls are fitted to the apparatus. The production of large machines of this kind furnishes a good example of what may be done in extending the utility of an invention merely by the application of mechanical judgment without any exercise of what can be properly called inventive skill.—*Cabinet Maker.*

WROUGHT-IRON TIES.—An English scientific journal makes the following interesting statements: The new railway sleeper which has lately been brought forward in England, is likely, it is thought, to prove of special advantage in some respects, and particularly in tropical countries. The constructors of the various railways in India, for example, experience the greatest difficulty in making and maintaining the permanent way. The dry rot, and those pests of India, the white ant, are terribly destructive. Sleepers sent from England creosoted and "pickled" are not protected from the influence of the sun and vermin, and seldom or never last more than three years. It was necessary, therefore, to find a substitute impervious to the attacks of insects, which might be made perfect and ready to be laid down whenever and wherever required. The new sleeper is made up of a number of webs and plates of rolled iron, riveted together, and pierced with bolt-holes for the chairs. This is estimated to save about two-thirds of the labor of laying, and leaves but little work to be done by native or other labor. The direct cost is found to be not more than one shilling each above that of the best wooden sleeper, and they are calculated to last ten times as long in tropical countries, and three times as long in Europe. Many eminent engineers and railway constructors, who have examined these sleepers, express great confidence in their superior adaption.

THE iron sea forts now in course of construction for the defence of the prominent naval stations of Great Britain, will, with the foundations, cost five million dollars apiece. The iron shell of one of the forts for Spithead, near Portsmouth, has been shipped by rail for that harbor from the works of the Whitworths, in the iron districts. This shell or skeleton weighs twenty-four hundred tons, and is to be fitted up with fifteen inch iron plates twenty-six feet in length. Each fort is to be seven hundred feet in circumference and two hundred and thirty feet high. They are to be armed with two tiers of guns, one tier of twenty-four 600 pounders, and the other of twenty-five 400 pounders. The guns, it is calculated, will pierce twelve inch iron ships at two thousand yards distance.

BROWN TINT FOR IRON AND STEEL.—Dissolve, in four parts of water, two parts of crystallized chloride of iron, two parts of chloride of antimony and one part of gallic acid, and apply the solution with a sponge or cloth to the article, and dry it in the air. Repeat this any number of times, according to the depth of color which it is desired to produce. Wash with water and dry, and finally rub the articles over with boiled linseed oil. The metal thus receives a brown tint and resists moisture. The chloride of antimony should be as little acid as possible.

ARTIFICIAL BUILDING STONE is now made with air chambers extending through the entire walls, rendering them airy in summer and winter, impervious to frost, and comparatively water and fire-proof. The coping grooves together, forming one continuous solid stone, over protecting the walls from the destroying elements of fire and water. The "Coming Stone" for foundation is stronger than many natural stones, and for building purposes—properly prepared—artificial building stone is as little liable to disintegration as natural stones.

SCIENTIFIC PROGRESS.

Atmospheric Influences on Lunacy.

The Chaplain of the Hayward's Heath Lunatic Asylum, Brighton, Eng., appends to the last annual report of that institution, a very interesting paper on the "Effects of Meteorological Facts of Insanity." A chart shows the rise and fall of lunacy for the last four years in relation to the changes of the atmosphere, the phases of the moon, the amount of ozone in the air, the rainfall, etc.

One of the results of this chart is fatal to the "vulgar error," that gives its very name to lunacy. "There is," says Mr. Crallan, "very little difference to be discovered in patients' fits between the average numbers for those days on which the moon's changes occur, and for the days composing the rest of the months, and what little difference there is in favor of the days on which no such change occurs."

It is very different with the sun. "I find," says Mr. Crallan, "upon examination of 212 accessions of fits, that, with five exceptions, they have been preceded or accompanied by considerable alteration in atmospheric pressure or solar radiation, or both; and here, I believe, lies the clue for which I have been seeking. For it seems to me tolerably clear that when a great fall or a great rise of the barometer, or a great rise or fall of solar radiation occurs—i.e., a decided change from bright to dull weather, or the opposite, or when both the atmospheric pressure and the solar radiation are much disturbed either in the same or contrary directions—an accession of fits invariably occurs. I am led, therefore, to the inference that it is, after all, not the moon which directly affects the epileptic patients; but the change of weather; and that it is the coincidence which not unfrequently occurs, of a change of weather with a change of moon, which has led the popular mind into the notion of the moon affecting both the weather and the epileptics."

So, too, of electricity:—"I find that, without one single exception, that these instances of augmented melancholic relapses have occurred after considerable disturbance of atmospheric pressure and solar radiation, either in the same or opposite directions. There is no doubt left on my mind of the fact that such disturbances are always accompanied by, if not due to, some alteration in the electricity. I find too, that out of these occasions I have records of thunder storms or heavy gales, but have no means of judging how far similar conditions might have existed at other times when these unmistakable manifestations of disturbance were too far off to be heard or seen, but not too distant to affect the health or to produce mental irritation or depression."

"I come, then, to the conclusion that, so far as my own observations go, any marked change of atmospheric pressure, solar radiation, or both, either in the same or contrary directions, is almost certain to be followed by increased number of fits among the epileptics, or by a development of mania or melancholia."

Piano Playing.

It may interest musicians as well as scientific gentlemen, to learn that Professor Schmidt, a German, has fully shown that pianists are men in whom certain mental qualities are enormously developed, and that their physical force is something astounding. The Professor heard Herr Rubenstein play at a concert, and took it into his head—of course after he had gone home—to count the notes which Herr Rubenstein had played by heart. The physiologist Haering has asserted that the profession of the pianist taxes the memory more severely than almost any other calling, and Professor Schmidt's counting of the notes gives countenance to the assertion: for by it the fact was shown that in that one performance Herr Rubenstein had used 62,990 notes. The Professor then used certain Austrian coins as a dynamometer to test the pressure necessary to strike a key on Herr Rubenstein's piano, and found it to be equivalent to two ounces and a half, and so it was shown that the pianist in playing the 62,990 notes had used a force amounting to nearly 94½ cwt.

The question arises, however, did he not exert a force far greater than this? for no pianist—especially no German pianist—uses merely force enough to bring a sound from the wires. What Bulwer said of Beethoven's "Storm" roused by the fell touch of a German pianist should be remembered, and would probably go to show that in that one piece alone Herr Rubenstein exerted force enough to move the earth from its orbit, while the ordinary player at concerts in the Bowery, should he utilize for that purpose the force he expends in one evening, might easily lug the world away far out of the reach of Professor Plautamour's comet, which threatens to destroy us all on the twelfth day of August next.—*The Week.*

ORIENTATION OF FRUIT TREES.—In *Les Mondes* we are told why some fruit trees in the open air are weak, contorted, and stunted. Their defects are due to the neglect of the precaution of placing them, when transplanted, as they had stood in the nursery ground. It is the effort of these trees to recover their original orientation which causes the contorted appearance.

The Principle of the Least Action in Nature.

Prof. Haughton, of Trinity College, Dublin, has recently delivered three very remarkable lectures which have attracted no inconsiderable attention, and involve the consideration of a very important principle, not only in mechanics but in nature generally.

Dr. Haughton pointed out that the principle of "least action" has been long known to mathematicians and physicists, but that it applies not only to material and inanimate objects, but likewise to animated nature, both in construction and action generally. The principle of least action, as it is applied to mechanics and astronomy, consists in showing that a certain integral $\int v ds$, must be the minimum, where v is the velocity at each point, and ds the element of its motion, and upon this principle the most accurate calculations can be made.

Not only can astronomical calculations be made upon the principle of least action, but in architecture the construction and very existence of certain forms depends upon rigid adherence to this law; the construction, for example, of a truly "self supporting elliptical equilibrium dome," being an excellent illustration. Not only, however, does this important principle govern the inanimate world, but it is clearly demonstrable that the muscles of animals are arranged, weighed, and built up in accordance with this law, and that the needful automatic actions of organized beings follow the same precept.

Thus the bee is shown to construct its cell upon this principle of "least action." Nature aiming at the production of a maximum quantity of work, with a minimum amount of material; for, inasmuch as it "costs the bee the trouble to make wax," so the construction of its cell, in a mathematical form which gives the largest possible room for storage of food with the smallest amount of wax, saves the bee trouble in collecting daily food to support muscular strength, by enabling him to build the best cell for the purpose with the smallest quantity of wax, and consequently with the least expenditure of force. Probably no more complete example could have been given of the fact that the bee's instinct accords in its action with the least expenditure of force in the production of the greatest beneficial results.

Carrying out this principle, it is shown how the shape and attachment of various tendons, ligaments, and muscles, the position and structure of different joints in various animals, are so arranged that the principle of "least action" is observed throughout. It would be impossible in a brief notice to give examples of this adaptation of means to an end in the most economic way, so far as the conversation of force is involved; but the illustration wherein it is shown that the arrangements of the spiral fibres in the heart is such that each fibre is made to do the maximum amount of work that its structure and arrangement are capable of, is especially beautiful. Thus we see that in the means employed by nature in bringing about the desired results there is no waste of force or redundancy of material—a consideration which it is especially important for the mechanist to endeavor to follow; and the lectures, above referred to, bearing entirely upon this grand principle of least action in nature, are as well worthy of the consideration of the mechanical engineer as they are of the physiologist and physician.—*Mich. Magazine.*

MOSES, AND MODERN SCIENCE.—J. Elliot, formerly Professor in Queen's College, Liverpool, says:—Geologists are not agreed about the number of hundreds or even of thousands of millions of years which must have elapsed since the earth's crust took a definite and palpable form; and the Biblical expositors are still less agreed as to what can be made with their days. The exposition given by the late Hugh Miller was at once worthy of modern science, and of the spirit of poetry which invests old legends. He divides the earlier geological periods somewhat differently. He thinks he gets rid of the awkward difficulty of the supposed creation of light before that of the sun, and of the absence of the sun and moon until the fourth day, and that he has established a closer agreement between the record of Moses and the revelatory science than has ever been suggested before; while all the arguments and sarcasms launched against previous interpretations lose their force falling on empty air. He expresses himself as well aware of the difficulty of the task set before him; but trusts that he has at least set up the framework of a sound structure, which the learning and ingenuity of others may ultimately render more perfect in its details. Mr. Elliot has published a small volume in support of the above.

VARIETIES OF COLORS.—New tints of the various colors are constantly being discovered, even the two thousand shades which have been produced by the dyer's art only indicate the effects that may be produced by a continual admixture of one tint with another. Among the forty or more shades of blue, scarlet, crimson and yellow, there are hues which were wholly unknown a few years ago, and for which it has been necessary to coin an arbitrary name, as they resemble nothing previously known. Every little while the popular fancy demands a new variation, and colors must be mixed and blended until something entirely novel is produced. It may be pretty or otherwise—that is regarded as of comparatively little importance, provided it is the style.

FARMERS IN COUNCIL.

San Jose Farmers' Club.

The Club met on Saturday of last week, with a very full attendance. A letter was read from Mr. I. N. Hoag, Secretary of the Sacramento Farmers' Club, enquiring: First—whether the wet winter had injured the fruit trees in Santa Clara Valley? Second—What the prospects were for field crops, and if the fruit trees there were injured? Third—What is the preventive and remedy for such injury?

The Fruit Trees.

Benj. Casey stated that some of his cherry trees were dying; but he attributed the cause more to the last dry season, than to the past wet winter. He had noticed, last autumn, that the trees showed signs of dying by the leaves turning yellow. Some of his other trees also showed signs of decay, but never before in his experience had he known winter rains or overflows to injure the trees. Secretary Herring said that it was his experience and observation that trees, previously healthy, did not immediately show the effects of overflow and excessive wet, but usually produced a crop of fruit before dying. He thought with Mr. Casey, that the reason for trees dying so early must be attributed to the drouth or other causes. Mr. Fowler said he had lost several apricot trees which he had attributed to the excessively wet soil. The trees grew well last season, and he did not think the dry season killed them, as such trees can stand a very dry soil and climate. The bark will now strip off, as though the trees were soaked and rotted in water. President Cottle stated that the late frost had in many places killed the peach, nectarine and apricot trees, and that it is a general complaint that grapes are badly injured, and in some places the new growth entirely killed.

Grape Vines and Field Crops.

Mr. Ware thought all had experienced the severest frost on grapes, in many localities, ever known in that section. Messrs. Casey, DuBois and Fowler, had not sustained any damage therefrom however. Mr. Pardee had avoided pruning very late, so that his vines took a very late start, and they escaped injury. Although his vineyard was on light warm soil, his late pruning had kept them back. All the field crops were pronounced very promising.

As to a Remedy

Against excessive moisture in the soil of orchards, Mr. Ware thought under drainage the surest method. Mr. Holloway believed that surface drainage would answer every purpose in most localities, where any drainage at all is necessary, and that it is also the least expensive and most practicable. Mr. Fowler would hereafter plant apricots, cherries, etc., on the highest ground. Mr. Cottle thought that complaint about injury to trees from too much wet is not general. Mr. DuBois says that in any locality where such injury has been sustained, there must be a strata of clay not far from the surface, which holds the water, as in a basin. Over a porous subsoil no such trouble need be anticipated, and the soils of Santa Clara County are generally of that description.

Address by Mr. Ames.

Rev. Mr. Ames, in response to a previous invitation to address the Club, now came forward and was introduced to the audience. After remarking that he had been invited only the day before, he proceeded to a vigorous showing of

The Relations of the Farmer to Other Avocations, and the advantages that may and should flow from a co-operation of all industries for good. Agriculture, itself a noble calling, must ennoble the man who loves his calling, and follows it with the right spirit and for the best and broadest purposes of life. The Farmers' Club should draw out the accumulated experience as matured by reading, study and thought, of whatever is of practical importance or relative value, that any member may deem worthy of consideration. Agriculture was never of more importance than it is now. The speaker compared the early times, when a large majority of the people were engaged in agricultural pursuits, to the present. Now manufacturing, commercial, intellectual and many industrial interests have grown up, while with the new appliances of science and mechanic arts six men may feed a thousand and the thousand can be doing something else; so that agriculture is as subordinate and as dependent upon the other industries as other industries are upon agriculture.

As the ages progress there should be a greater harmony of interests, and a more mutual benefit. Intelligence and luxury should belong as much to the farmer as to the merchant or pro-

fessional man. Agriculture is never again to be a separate interest. It is the duty of the farmer to rise above a mere plodding toiler, to whom, and to whose wife, life is too often but drudgery and selfish narrowness. Every husbandman should reap the harvest of intellectual inspiration, and every laborer's heart be filled with broad human impulses.

He expected to meet with some opposition, but he did not think it right to lean upon the government for aid in advancing every or any industrial interest. It is loading too much corruption. Government should be the people's police force to guard the just interests of all, but not to bolster up any interest in particular; it should allow each to stand, or fall on its own basis.

He had begun to think that the Agricultural Bureau at Washington is of little real use. It is run in the interests of a few office holders, and at the command of party, and adds one more corrupting influence. He believed that private and enterprising combinations of interests would accomplish all the good results. The agricultural papers, supported by individual interests, are of more benefit to the farmers than the Bureau at Washington.

All that the farmer requires for a material prosperity is ample markets and a fair price for his products. Monopolists which consume an undue share of profits between the producer and consumer must be combated.

The farmer thrives when the manufacturer thrives; the unity of interest is so great that no great interest can suffer without affecting all the others.

Agriculture is a spoke in the wheel of which all necessary industries go to make the whole. The prayer for daily bread is a prayer for the success of agriculture, which produces it.

True co-operation consists in all working together, every dependent interest in unison. But it is better to co-operate as far as we can than to endure the evils of greed and extortion. A mutual dependence and fairness is better than clashing or an isolated independence. He likened the Farmers' Club to a squad drill, and spoke of the necessity of thinking before talking.

In early times men offered up burnt sacrifices to God; now, we gather up the fruits, grains, herbs and products of industry, and lay them on the grand altar of humanity, to please God by serving man.

We do not claim this as a full report of Mr. Ames' address, but give it as an insight to the arguments used.

The eloquent speaker was heartily applauded, and received a vote of thanks.

Mr. Erkson said that he would like to discuss the question as to whether the State and National Government should undertake to patronize agriculture. He thought agriculture had received much benefit from the Department Reports and distribution of seeds, etc.

Mr. Holloway thought Mr. Ames in the right. As Americans, we should not foster in any unequal way one industry above another; but we should have a national protective tariff, and give our own manufacturers the advantage over the outside world.

Mr. Ames would see every interest rely more upon itself than upon the government. There is too much running after and figuring for government and legislative aids. It is demoralizing. A fair competition and the demand for what is really useful will bring out the best without such patronage. The government should not be anybody's wet nurse, no matter what else it is.

Mr. Holloway pointed to the late convention which was called by the Government Agricultural Bureau, and to how the educated farmer was there treated with contempt by the salaried princes of the Department. He spoke of the subsidies, and among other things the appropriations to the liquor ring of this State, and to the agricultural societies which had degenerated into mere shows for fast horses and racing.

The kind of stealing which takes from the many, is too generally looked upon as all right. We must hold a stiff rein upon our public servants and our middle men.

A committee of three was appointed to invite the agents of the mowing machines to a fair trial in the field at an early day.

A vote of thanks was extended to Phil. Harold for presenting 24 volumes of Appleton's American Encyclopedia, for the use of the Farmers' Club, and Mr. Harold was made an honorary member by acclamation.

The Committee appointed to examine Pfister's "Champion Mower and Reaper," reported that they were well pleased with the machine.

On motion of Mr. Erkson, a Committee consisting of Messrs. Settle, Cadwell and Chipman were appointed to confer with the agents of the different mowing machines in San Jose, with a view of arranging a competitive exhibition, to take place at an early day.

Farmers' Club of Sacramento.

In the absence of the President Mr. Greenlaw was called to the chair, and Mr. Haynie, Secretary pro tem.

A letter was read from Mr. Myers, of Marysville, proposing to exhibit his subsoil plow before the Club, should they desire to see it work. The Club accepted the proposition, and fixed Saturday, May 4th, at Sacramento, as the time and place for such exhibition, and appointed Messrs. Aiken, Miller, Stewart and Greenlaw

a committee to select the ground and superintend the trial. The trial will be a matter of interest to all who are interested in the cultivation of the soil, as Mr. Myers proposes to show a plow that will subsoil the land say from 12 to 16 inches deep, and either bring the subsoiled soil to the surface or leave it in its original position after it shall have been loosened and well stirred.

Mr. Johnston presented to the Club a sample of a fruit box, as made by Starr & Little, of San Francisco—box manufacturers.

The discussion of the merits of the box was postponed until next week.

The subject of injury to fruit trees by excessive wet in winter season came up, and Mr. Rutter, whose orchard is on the red land, with hardpan near the surface, said in his opinion the best mode of avoiding the evil complained of was by deep drainage, and if this could not be obtained so as to lead the water off the land then dig negative wells and lead the water into them.

Mr. Johnston, who cultivated bottom land, agreed with Mr. Rutter.

Mr. Haynie suggested ridging the land for an orchard and planting on the ridges.

Mr. Miller exhibited some magnificent specimens of strawberries, grown at Alder Creek, Sacramento, and Mr. Rutter treated the members of the Club with a most excellent wine of his own raising and manufacture.

The Secretary informed the Club by note that the correspondence with other Clubs had been attended to.

Oakland Farming, Horticultural and Industrial Club.

The Oakland F. H. and I. Club organized at a meeting held in the Chemical lecture room of the State University, Oakland, Friday evening, April 19th, by adopting the following constitution and by-laws reported by the committee already published.

CONSTITUTION.

1. This organization shall be known as the Oakland Farming, Horticultural and Industrial Club.

2. Its object shall be the improvement of its members, in the theory and practice of Agriculture, Horticulture and other Industrial and Domestic Pursuits.

3. Its members, additional to its original number, shall consist of such persons as shall receive a two-thirds vote of a regular meeting for admission, and pay the sum of one dollar, sign the constitution and by-laws, and continue to pay the same amount annually thereafter.

4. Its officers shall consist of a President, Vice-President, Secretary, Treasurer and Librarian, (who shall jointly constitute the Executive Committee), and shall be elected by majority ballot annually, in January, notice of such election to be announced at a meeting at least two weeks previous. The first annual election to be in January, 1873.

5. Its meetings shall be held twice a month and at such special times as the President may deem necessary to the good of the Society.

6. This constitution may be amended by a two-thirds ballot, at a regular meeting, the same being proposed in writing at the previous regular meeting.

BY-LAWS.

1. The President shall preside at all meetings of the Club and Executive Committee, and have power to call special meetings.

2. The Vice-President shall have like power with the President, in the President's absence, and shall preside during his absence or inability.

3. The Secretary shall record the proceedings of the Club, and conduct its correspondence.

4. The Treasurer shall receive all moneys, and pay out the same on the written order of the President.

5. Regular meetings shall be held on the second and fourth Fridays of each month.

6. The following standing committees shall be nominated and elected by the Club at the first meeting following the present and each annual election thereafter:

1, Farming; 2, Horticulture; 3, Floriculture; 4, Arboriculture; 5, Household Economics; 6, Mechanical Industries; 7, Poultry; 8, Stock; 9, Exhibition.

7. Vacancies in committees shall be filled by appointment of the President.

ORDER OF BUSINESS.

Reading of Minutes of last meeting; Reports of Standing and Special Committees; Unfinished Business; New Business; Reading of Communications; Essay; Discussion; Subject for next Discussion.

Twenty-three names were subscribed as members, three of them being ladies.

The following officers were elected to serve until January, 1873: Pres., Dr. E. S. Carr, (Professor of Agriculture and Chemistry, of the State University); Vice-Pres., Chas. W. Howard; Sec'y., A. T. Dewey; Treas., Christian Bagge; Librarian, Chas. H. Dwinelle.

By unanimous consent, on motion of Harry Linden, the rules were suspended and the committees on horticulture and floriculture were elected, as follows: On horticulture, J. V. Webster, (of Fruit Vale, Brooklyn), Christian Bagge, W. F. Kelsey, J. H. Hutchinson, Col. Harry Linden; on floriculture, M. Pryal, (of Temescal), S. Nolan, Mrs. C. L. Pierson, John Ross and J. H. Gilmore.

It was also unanimously resolved that the

annual dues for 1872 be considered due and payable at the next regular meeting.

Quite an interest was manifested in favor of holding a Horticultural and Floral Exhibition in Oakland the present season, in May, and a motion, declaring such an exhibition desirable, prevailed.

The Secretary was instructed to print 1,000 copies of the constitution and by-laws, and send with other information to persons likely to become members of the Club or personally interested in its welfare.

Prof. Carr accepted the invitation to deliver an address before the Club at the next meeting, the subject of which will be announced through the press. An invitation was extended by resolution of the members for an exchange of communications from similar organizations, and for the reception of correspondence and questions from individuals on this coast.

Mr. J. V. Webster presented a generous supply of tree seeds fresh from his own grounds. A liberal supply of choice vegetable seeds (30 to 40 different varieties put up by the Agricultural Department at Washington), were also presented to the Club by E. E. Moore, of 425 Washington street, San Francisco. Mr. Moore also, by request, donated a good supply of early sugar corn seed and a quantity of mangel wurzel seed of the variety of the 112-B beet recently exhibited at his store. A large portion of the first and last named seeds remain for distribution at future meetings.

For the first meeting, it proved quite a social and successful one, indicating that the favorable circumstances and special advantages existing in Oakland for such an organization are likely to be fully availed of. The presence of ladies and specimens of flowers were graceful features of the occasion.

The place of meeting is a very suitable one, and can be lighted and used at very small expense to the Club, which seems to have a promising future, numbering as it does some of our most practical culturists and active men of Oakland.

Subscriptions to membership will be received at each meeting or at any time by the president or secretary. Adjourned for two weeks, to Friday evening, May 3, at 7½ o'clock.

SEVERE FROSTS.—Placer Herald, April 20: the middle of last week this county, and indeed the whole State, was visited with severe frosts, doing much damage to the fruit crops. We learn from J. R. Nickeson that fully 100 acres of his large vineyard suffered complete destruction of the new growth and blossoms, and that others in the western section of the county suffered in like manner in proportion to the number of vines. This does not involve an entire loss of the crop, as these vines will put forth new wood and blossoms, and yet yield say two-thirds of the usual quantity. From the same authority we learn that peaches, almonds, cherries, nectarines, plums and other tender fruits have been almost entirely destroyed. Apples and pears are not so seriously damaged. Strange as it may seem, those fruits here, at an elevation of some 800 feet higher than the localities named, have not suffered to any extent. In Sonoma and even as far south as Los Angeles, grapes and tender fruits suffered severely. The current crop around the bay is also said to be nearly destroyed. Doubtless north and east of here in this county these crops have suffered more severely, if indeed any has been left. Notwithstanding these reports we think it will be found that enough fruit has escaped in this county to make a full, or nearly so, average crop in most localities.

HARVEST LABOR.—It is now certain that, if the grain crop the present season is not quite as large as was for a time expected, yet the yield will be sufficient to bring a question of great importance seriously before the farmers throughout this and other counties. This important question is, where are the laborers who are to take care of the harvests the coming season? In some past years, when a much smaller quantity of grain was sown than the present year, much loss was sustained by reason of lack of laborers. The present season promises to be even worse. The poor crops during the past few years have caused a large portion of the laboring population to seek other homes. And now, unless means are taken at an early date to secure a suitable force for the coming harvest fields, we may expect considerable loss.—Napa Reporter, April 20.

Muzzling Dogs.—The practice of muzzling dogs during summer, is based upon the popular supposition that hydrophobia is induced by hot weather. Statistics show that dogs are more liable to attacks of madness in winter than at any other time, and this disease is unknown where the heat is intense.

But one false step, one wrong habit, one corrupt companion, one loose principle, may wreck all your prospects, and all the hopes of those who love, honor and regard you.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Transcript, April 20: OAKLAND INDUSTRIAL CLUB.—A meeting of our citizens was held in the chemical room of the State University last evening. A club was duly organized to be called the Oakland Horticultural, Agricultural, Floricultural and Industrial Club. The following officers were elected: President, E. S. Carr; Vice President, Charles Webb Howard; Secretary, A. T. Dewey; Treasurer, Chris. Bagge. The following Committees were appointed: On Horticulture—Webster, of Fruitvale; Col. H. Linden and Mr. Kelsy. On Floriculture—S. Nolan, Mrs. Pierson, Mr. Gillam, John Ross and A. D. Pryal. Committee and By-Laws are to be published, for gratuitous distribution, and can be obtained from the Secretary, A. T. Dewey. At the suggestion of the club a floral exhibition was proposed to be held about the 15th of May next, and the matter was referred to the above named Committees. The Club adjourned to May 3d, when they will be addressed by Professor Carr.

Encinal, April 20: THE WEATHER, ETC.—Quite a variety of weather has been experienced during the past few days. First, the cold, searching weather; then, the frost at night; after this came rain and milder weather. The heavy frosts of last week caused considerable damage in some portions of the county. We noticed fields of potatoes—one in the vicinity of San Leandro, particularly, and one at San Lorenzo, being replanted—completely destroyed by the late frosts. Elsewhere, vegetation looks unusually forward. The fields are a perfect sea of loveliness, and the hills, as viewed from a distance, are tinted by the different shades of flowers upon their sides, and with the lights and shadows of the clouds and sunshine falling upon them, form a beautiful picture for the lover of nature.

THE GENTLE RAINS.—The soft rains of the past few days have been of inestimable value to the country at large, giving a fresh impetus to vegetation of every description. The very latest plowing can now be finished, and even the tenderest seeds may be planted with good assurance of success, while for transplanting there can be no better opportunity than the cloudy days the week past has afforded us. The only trouble the croakers can now foresee is "the impossibility of obtaining hands to harvest the bountiful crops promised."

BUTTE.

Enterprise, April 13: OUR CROPS.—Notwithstanding the long continuance of the "rainy season" and the delays to farming incident thereto, our ranchmen have managed to sow a much larger acreage of grain than ever before, all of which is looking most promising. The continuous north winds of the past six days has dried and crusted the surface of the ground and threatens to retard the growth of the new grain, but their cessation and the present indications of a storm have removed fear wherever entertained, that "all will be well." Providence, in all the years gone by, has most especially blessed our region with "rain and sunshine," and now that our people grow more virtuous and moral with the advance of civilization and improvement, it is hardly to be expected that he will withhold his smiles. Indeed we have no reason to despair, for the evidences of His fostering care is made palpable in the rapid progress of our section, and the astonishing developments of the resources of the country each day produced.

Review, April 19: THE RAIN AND CROPS. The timely rains of this week were opportune. The long spell of north winds had nearly dried up everything. The ground in which the late grain had been sown had become so baked and dried on the surface that the grain could not penetrate it, but now the whole surface is covered as it were with a beautiful green. The early sown grain looks beautiful, and most of it far enough advanced to shade the ground and preserve moisture. We have conversed with farmers from Hamilton, Butte Valley, Dayton and Rock and Pine creek sections who all have the same encouraging words regarding a bountiful crop. From the west side of the river, from Princeton to Newville, in Colusa county, the rains have done immense good. The ground had become dry and parched six inches below the surface, and summer-fallowing last week was done with great difficulty; now everything is looking lovely—the late sown grain is all up, and the

ground is moistened sufficient to penetrate to the old moisture. The whole of the vast plains from the Sacramento river to the Coast range and from Tehama to Colusa is one great grain field which will yield an immense amount of wheat, three-fourths of which will be for exportation. If the price of wheat keeps about \$1.50, farmers will have as good a thing as they want.

CONTRA COSTA.

Gazette, April 20: THE RAINS.—The rains of the week appear to have been very general throughout the State, and the weather is by no means settled yet. Since the 12th inst., ninety-two hundredths of an inch have been added to our rain measure for the season, making the total 28.04. The benefits of these late rains are incalculable, for, with the drying winds the surface of the ground had been hard baked, and the grass and grain had already begun to wear a blighted and stunted appearance that was greatly disheartening, but these timely rains that have invigorated and refreshed the earth, have equally refreshed the spirits and hopes of the creatures who are nourished from its bounties.

FRESNO.

Expositor, April 17: WOOL.—Notwithstanding a great many sheep have been driven out of the county during the past year, and that a great many died from exposure and starvation during the past winter, the wool clip of Fresno will be greater by far than ever before. The mania for the business seems to be extending too, and we should not be surprised to see the county, this season, as thoroughly overstocked with sheep as it has been heretofore with cattle.

WOOL SHIPMENT.—The first shipment of wool ever made from this county by rail, and the first shipment made in anywise this season, was, one day last week. Mr. Louis Studer, being the consignor. It was loaded on the cars at the station on the south side of the San Joaquin.

THE EARTHQUAKE IN THE MOUNTAINS.—A report comes to this town from Keyser Gulch, near the headwaters of the San Joaquin, that the miner's cabins in that vicinity were thrown down by the earthquake on the 26th ult., and trees were knocked down and destroyed by immense rocks rolling from the mountains. Keyser Gulch is near the summit of the Sierras and cannot be more than forty to fifty miles distant from Independence, Inyo county. The Indians report that a mountain near the summit is on fire.

LAKE.

Napa Reporter, April 13: We have made it our business this winter, to have considerable talk with farmers and stock raisers, for the purpose of gaining useful information as regards the expectant yield of crops the amount of grain sown, and the prospects of harvests, and in every case where I have talked with practical enterprising farmers as to whether this season would be prosperous to their interests or not, they invariably tell me that there is no reason to complain and that if the farmer will only cultivate his grounds as they should be, there can be no danger but there will be abundant harvests, and that they are those who neglect their work who are complaining of wet and dry weather. Likely too true.

DESTRUCTIVE FROSTS.—During the past week very severe and destructive frosts have visited the upper part of our valley. On the 9th and 10th inst., ice formed to the thickness of a quarter of an inch. The grape crop about St. Helena is greatly damaged. The vineyards of Mr. Pellet Mr. Krug, Mrs. Penwell and others have been so severely bitten that the crop has been almost entirely destroyed. Other fruits have also suffered considerably.

MERCED.

Tribune, April 20: From a party just returned from a trip to Yosemite, we learn that the route is entirely free from snow, although the contrary has been reported as the case. Following the river road to the Cascades, near Gentry's, no snow was encountered, except at that point, and there the trail was shoveled clear and kept free for travelers. It is too early yet, however, for those who would see the valley in its season of greatest beauty to undertake the trip. In the middle of June, it is conceded, the pleasure of the tour is much enhanced. At that time the waterfalls are pouring over the greatest volume of water, and the verdure of the valley is in its fullness, and the landscape dotted with a myriad of flowers.

MARIN.

Journal, April 20: The recent rain storms have made a pretty thorough sweep of the agricultural counties. Most of the grain-

growing regions have felt their vivifying influence. Even beyond the valley temperatures—high up in the mountains—there was either rain or snow, by which timely visitation the voice of the growers has been silenced, and a firm expectation re-established for an abundant harvest. It is believed that the damage by frost will be much lighter than some have supposed. The vines in most instances will renew their shoots in time to bear, if the weather prove favorable for their maturity in the fall. Most of fruits were too far advanced to suffer much injury from the frost.

AGRICULTURAL FAIR.—A meeting of the Sonoma and Marin District Agricultural Society, was held in Petaluma on Wednesday last for the purpose of fixing the time at which the Fair shall be held this year. It was decided that it should commence on September 9th, and continue for six days. The Secretary of the Society has received information from other Agricultural Societies in the State, as to the time when their Fairs will be held. The Santa Clara Valley Fair will commence September 2d, and continue six days; the San Joaquin Valley Fair will commence September 4th, and continue four days; the State fair will commence on September 19th, and continue ten days.

MONTEREY.

Democrat, April 20: NEXT HARVEST.—The rains which have fallen during the week make it reasonably certain that an enormous harvest will be gathered this year. Preparations on a proportionate scale are being made for it, machines, etc., being imported in great numbers. It is doubtful, however, if there be hands enough in the country and we are likely, literally, to be embarrassed with riches.

THE CROPS.—Sheriff Wasson, returning from a tour east of the Gabilan range, as high up as Fred Taylor's store on the San Benito, tells us that the crops make a splendid appearance everywhere that he has been.

RAINS.—We have had fine rains during the week, with an accompanying temperature, soft and favorable to vegetable growth.

NAPA.

Reporter, April 20: SILK CULTURE IN NAPA.—W. S. Baxter, Esq., of Springdale Farm, near town, presented us with a lot of beautiful cocoons, as perfect as any we ever saw. They were of good size and of a very fine sulphur yellow in color. He has had a cocoonery in operation for three years, and the prospect of success is excellent. He has a thriving plantation of mulberries, which he is extending yearly, and proposes to enter largely into the business of silk culture.

WILD OATS FROM POPE VALLEY.—We have before us samples of wild oats from the ranch of Messrs. Davenport and Servant, in Pope Valley, that measure four feet three inches in height. No doubt the late rains have given their crop another lift, and that the next samples received will double that height.

NEVADA.

Union, April 20: PLANTING TREES ON MINING CLAIMS.—The Independence Company own a track of land of over sixty acres, and have established a nursery for the purpose of covering their extensive surface ground with fruit and forest trees. This is a move in the right direction, and should be imitated by all the companies owning land suitable situated. If this mode of improving mineral lands had been adopted by the early miners, the foothills would be dotted with cheerful homes, and many families might be happy in the possession of an orchard now in full bearing. A little more attention spent on the surroundings of our mines and quartz mills would not hurt. Tree plantations are not expensive, but they are useful and ornamental at the same time.

SACRAMENTO.

BET SUGAR.—*Bee*, April 19: The two beet sugar manufactories now in operation in this State, have made large preparations for the coming season, which is the best possible indication that the enterprises are profitable ones. The Sacramento Company have planted 1,100 acres, while the Alameda Company have planted 400 or 500 acres. It is conceded that we have soils peculiarly adapted to the production of the sugar beet, and it is to be hoped that the experiments now being made will encourage the construction of factories in other localities.

TO SETTLERS.—*Folsom Telegraph*, April 20: Hundreds of acres of land, suitable for pasture, fruit or vineyard purposes, can be found between the North and South Forks of the American river, distant from Folsom but a few miles, open to

homestead or pre-emption settlers. The C. P. R. R. Co., have also large quantities of land for sale at two and a half dollars per acre, twenty per cent. down and the balance within five years.

LARGE VINEYARD.—The Natoma Water and Mining Company are putting two hundred acres of land in order, at Alder Creek, about two miles and a half from this town, preparatory to putting in on the entire tract, the best varieties of grape vines, which are now being rooted at Taylor's Nursery, below town.

BOTH cultivated and native flowers are holding a floral carnival at this time in the hills, nodding their heads and scattering their perfume, through garden, field and prairie.

THE WEATHER.—The foothill belt has experienced a variety of weather during the past week—snow, hail, and heavy showers of rain. This section was in want of rain after the late northers. Now, however, everything is lovely again, and all are satisfied, if they are not they ought to be.

SAN DIEGO.

Union, April 11: CATTLE FROM TEXAS.—A Mr. Cregg arrived at La Punta yesterday with 250 head of cattle, which he drove from Texas to California. He started originally with 500 head but the Apaches managed to secure about half the number on their way through Arizona. The drove started from Texas about a year since.

SANTA CLARA.

Advocate, April 20: SOME TROUT.—Mr. S. B. Davis, of Santa Clara, while fishing a few days since, on one of the tributaries of the San Gregorio creek, caught a trout of the speckled mountain variety that measured sixteen inches in length. As he killed thirty others, of somewhat less size, on the same trip, he considers it is not bad trout fishing.

Index, April 20: THE COMING HARVEST.—Never perhaps since the settlement of this valley has the grain prospect been any better than at the present time. The area sown in this valley is larger by thousands of acres than it ever was before and the prospect for an immense crop was never better at this season of the year. The only enemy now to be feared is the rust, the injury from which will depend upon the state of the weather at the time the grain begins to head. In any event we think we may count on a very large yield.

OREGON.

LINSEED OIL MANUFACTORY IN OREGON.—*Willamette Farmer*, April 13: The manufacture of linseed oil in Oregon, says the *Commercial Reporter*, is of comparatively recent origin. The first and only factory erected is the Pioneer Oil Factory, at Salem, and was incorporated Nov. 1, 1866, with the capital placed at \$60,000, divided into 100 shares at \$100 each. The first linseed oil was manufactured Dec. 25, 1867, and owing to the machinery being of the latest and best improved pattern obtainable at the East, the oil was of superior quality and met with quick sale. Since then the factory has had control of this market, and owing to the superior quality of the oil manufactured is attracting attention abroad. The capacity of the mill is 180,000 gallons per annum, but only about 120,000 gallons annually are manufactured. The oil meal, of which there is manufactured several hundred tons, meets with quick sale; in fact, the company found it difficult during the past winter to supply the demand, owing to the very general favor with which it is held for cattle feed by consumers. The mill is run by water, with a 48-inch Leffel turbine wheel, so that oil can be manufactured at light expense. The main office of the company is at Salem. The officers are Joseph Holman, President; George P. Holman, Agent; James Penny, Superintendent. If there can be built up a large export trade, this branch of our industrial pursuits will increase, as the climate and soil combine to make this a favored State for growing flax.

PROSPEROUS TIMES FOR FARMERS.—The farmers of Oregon have had what might be called "a streak of good luck." Commencing with February, 1871, they sold immense quantities of stock to go east of the mountains at good prices. Then came the last year's wool clip, sold at higher prices than ever before received in Oregon. Then came the crops of wheat and oats, away up at golden prices; and now comes the purchaser and offers fifty-five cents coin for this year's clip of wool. This is certainly encouraging to the steady-going Oregon farmer. If he can't roll out the coin at these rates, we fear there must be a screw loose which ought to be tightened up immediately.

Progress in the Telegraphic Art.

Telegraphing Both Ways, Simultaneously, on a Single Wire.

Some considerable interest has been attracted during the past few weeks, to the new improvement in telegraphing recently introduced upon this coast by the Western Union Telegraph Co., which consists in the feat of sending messages, in opposite directions, simultaneously, upon a single wire! The attempt has frequently been made to perform a similar feat with railroad trains upon a single track, but hitherto without success; but in telegraphy the thing is now actually accomplished, as may be seen every day at the Western Union Telegraph office, on California street.

When the electric telegraph was first brought into practical operation by the late Prof. Morse, it required two wires to complete the circuit and convey a signal from one point to another. Subsequently, however, it was discovered that by carrying a wire down into the earth at each end of the line, one wire could be dispensed with—the earth and two ground wires taking the place of the return wire. This was considered at the time the *ne plus ultra* of telegraphing. But science knows no limit to progress, and scarce ten years had passed ere the single line gave promise of becoming double, by an ingenious device—the germ of the double transmission system above referred to. For several years after the first inception of this invention by Frischer, of the then Kingdom of Hanover, improvements were made from time to time until Mr. Joseph Stearns of Boston, Mass., finally produced the device herewith shown, by which the system has now become one of great practical value.

How it is Done.

In the ordinary manner of transmitting signals from one station to another, as from *K* to *K'*, as shown in the accompanying illustration, when the key at *K* is depressed and contact made at *a* with the positive pole of the battery, *E*, a signal is made to pass on through *b* 1, and the relay *M* to 3, over the line *A* B, through 7 and the relay *M'* to 5, to *b'* and the negative pole, *a'*, of the battery, *E'*. The ground wires *G* and *c'* *G'* being adjusted to take the place of the return wire, which was employed, as above said, on the earliest telegraphs. On a main wire, so adjusted, a signal could be sent only one way at the same time. The modification of the device by which it is made possible to transmit signals both ways at the same time is as follows:—

In the ordinary device the relays *M* and *M'* were wound with single wires in one direction; but in the double transmission system, which we will now describe, they are wound with two wires in opposite directions. The second wire passes from 1 through 2 around relay *M* to 4, thence through a "resistance coil," *X*, to the ground wire, *c* *G*.

A similar arrangement is connected with the opposite station at *B*, as shown, where, however, the positive pole of the battery is connected with the ground.

The result of this arrangement is that when current is sent from the battery, *E*, it is divided at 1, one-half passing through the relay, *M*, by the wire wound, say from left to right, and *via* 1 and 3 to the main line of wire, *A*, and station at *B*; while the other half passes through the relay by the wire wound from right to left and *via* 2 and 4 through *X* to the ground wire *c*, *G*. The same connection and division of currents will be noticed by the corresponding lettering of the station at *B*—the half current passing thence to the station at *A*.

It is by this division of the electric current—one-half going to the ground and the other over the wire—that it is found possible to send messages both ways at the same time, without any interference of the one with the other.

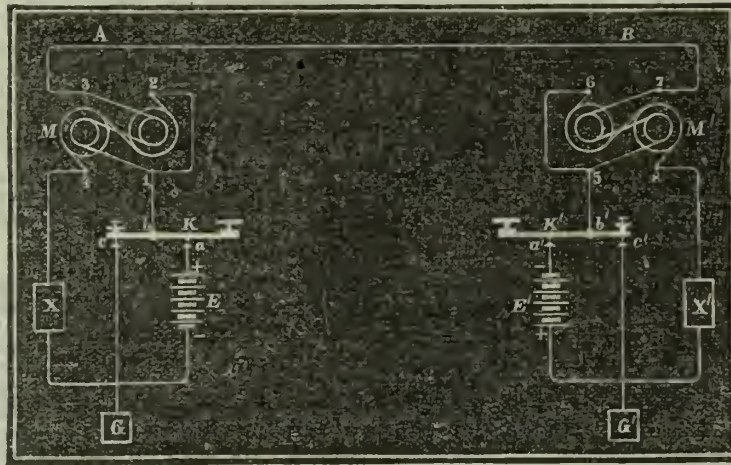
It must not be understood, however, that any portion of the signals are conveyed by the ground current, as some of our Eastern scientific cotemporaries have stated. All the signals pass and re-pass over the one main wire. The philosophy of the thing is well understood by such electricians as have made the subject a matter of study; but it is rather too abstruse to be clearly defined to the ordinary reader.

In the practical working of the system two instruments are placed upon a table, at each end of the line, one of which receives, while the other simultaneously sends messages—a low partition being placed across the centre of the table, between the receiver and sender, to

prevent the sound of the instruments from interfering with each other.

Only one condition is requisite to the perfect working of the system, and that is that the current must be equally divided at 1 and 5. This result is secured by an ingenious adjustable arrangement at the two points of resistance, *X* and *X'*. It would be difficult to explain this principle, or the adjustable nature of this resistance, or "rheostat" as it is technically called; but the device is perfectly familiar to every electrician. If a wire, say 100 miles in length between two stations, is in perfect working order, the "rheostat" (*X*) must be equivalent in its resistance to the resistance encountered by a perfectly insulated wire of that length. But if by reason of unfavorable weather, or imperfect insulation, a greater resistance is encountered on the main wire, making it equivalent to say 150 miles in length, the extra 50 miles can be instantly applied to *X*, and the balance be thus kept constant and equal.

There are some unimportant details connected with this system, which present greater or less difficulties, and which to that extent interfere with the perfect working thereof; but there is reason to believe that research and experience will eventually remove all obstacles to perfect success, in which event the working capacity of every telegraph line will be doubled—a result the value of which can scarcely be estimated in dollars and cents. The Western Union Telegraph Company have recently acquired the exclusive ownership for the United States of the patents secured by Mr. Stearns,



DEVICE FOR TELEGRAPHING BOTH WAYS, SIMULTANEOUSLY, ON A SINGLE WIRE.

for his duplex instruments, which cover the most valuable and practicable devices for utilizing this latest marvel in telegraphic progress.

The duplex instruments have been in practical service for some time in New York, and their operation here is said to be so satisfactory that the company proposes to introduce them into all their offices on this coast, where the press of business may require them. The first experiments made in this city with this system were conducted by Mr. S. D. Field, the well known electrician of the Western Union Company of this city.

DR. FRANKLIN'S TOAST.—Dr. Franklin once dined with the English and French ambassadors, when the following toasts were drunk:

The British ambassador said:—"England—the sun whose bright beams enlighten and fertilize the remotest corners of the earth."

The French ambassador, glowing with national pride, but too polite to dispute the previous toast, drank:—"France—the moon whose mild, steady and cheering rays are the delight of all nations, consoling them in darkness, and making their dreariness beautiful."

Dr. Franklin then arose, and, with his usual dignified simplicity said:—"George Washington,—the Joshua who commanded the sun and the moon to stand still, and they obeyed him."

SELLING MILK.—Some German papers are urging that milk be sold, like spirits, according to the percentage of the valuable constituent. Both sellers and purchasers of spirits are satisfied with this method, as would be also both sellers and purchasers of milk. The advantages are manifest, so much so that one editor thinks it necessary to allude to one only,—that there would then be "no necessity among dairy-men of raising milk-water-giving cows and of making the cattle sick."

HINTS TO HORSEMEN.

THE TEETH OF A HORSE.—At five years of age a horse has forty teeth. These are twenty-four molar or jaw teeth, twelve incisor or front teeth, and four tusks or canine teeth, between the molars and incisors, usually wanting in the mare. At birth, only the two nippers or middle incisors appear. At a year old, the incisors are all visible on the first or milk set. Before three years the permanent nippers have come through. At four years old, the permanent dividers next to the nippers are out. At five the mouth is perfect, the second set of teeth having been completed. At six, the hollow under the nippers, called the mark has disappeared from the nippers, and diminished in the dividers. At seven, the mark has disappeared from the dividers, and the next teeth, or corners, are level, though showing no mark. At eight, the mark has gone from the corners, and the horse is said to be aged. After this time—indeed, good authorities say after five years—the age of a horse can only be conjectured. But the teeth gradually change their form, the incisors becoming round, oval and then triangular. Dealers sometimes bishop the teeth of old horses; that is, scoop them out to imitate the mark; but this can be known by the absence of the white edge of enamel which always surrounds the real mark, by the shape of the teeth, and other marks of age about the animal.

HOW TO FATTEN HORSES.—Many good horses devour large quantities of grain and hay, and still continue thin and poor—the food eaten is not properly assimilated. If the usual feed has been unground, grain and hay, nothing but a change will effect any desirable alteration in the appearance of the animal. In case oil meal cannot be obtained readily, mingle a

LOOK TO YOUR HORSES' FEET.—Few men who handle horses give proper attention to their feet and legs. Especially is this the case on farms. Much time is spent of a morning rubbing, brushing and smoothing the hair on the sides and hips, but it is seldom the feet are examined and properly cared for. The feet of a horse need quite as much attention as the body. They need more, in fact, for in one respect they are almost the entire horse. All the grooming that can be done won't avail anything, if the horse is forced to stand where his feet will be filthy. In this case the feet will become disordered, and then the legs will get badly out of fix, and with bad feet and bad legs there is not much else of the horse fit for anything. Stable prisons generally are terribly severe on the feet and legs of horses, and unless these buildings can afford a dry room, where a horse can walk around, lie down, or roll over, they are not half so healthy and comfortable to the horse as the pasture, and should be avoided by all hostlers.

COLT FOUNDER.—The disease of colt founder, so-called, is not founder in any sense of the term, except that it disables the animal—like founder—and deprives it of the free use of its limbs. As the term indicates, it is owing to the peculiar condition of the mare, and not in consequence of over feeding or watering, while too warm, or contraction of the hoofs. The best authorities declare it to be rheumatism. Farmers say a mare down with colt founder should be kept quiet, in a good roomy box, or in pasture when the weather will permit; should not be often disturbed or excited to rise. When relieved of the foal, there will be no trouble; she will soon be well. The writer has lost one valuable mare by this disease, but never had one sick that was cured. Has seen other animals similarly affected, and believes that as long as they are able to get up and feed and stir a little, there is hope; when they stop to rise and feed of their own accord and without assistance death is pretty certain to follow. Give no medicine. Keep the bowels open.

TO BREAK HORSES OF PULLING ON THE HALTER.—A correspondent of the *Rural New Yorker* communicates the following to that journal: Have a stout rope—one that is not easily broken; knot it around the animal's neck with a knot that will not slip (I prefer the Texan's knot) then give the rope a hitch around the under jaw just behind the lower tusks. Give about eight feet play of rope from his mouth to the tree. Give the rope two turns around the tree; take a keen whip and whip him in the face until he pulls the rope, you letting it slip a little in your hand. When he gets quiet, draw him up a second time and a little closer. Whip him again in the face. Repeat this until he is satisfied that he cannot get off. After four or five trials he will have learned the lesson. If the operation is properly managed, after the third or fifth trial to get away, he will stand and allow you to whip him in the face, and never move his feet, and will never pull on the halter again. This is reliable. I have used it often with success.

BALKY HORSES.—It is rarely well to whip or kick or scold a balky horse, as is the common practice. One of the best modes is to feed him where he stands with any accessible food, such as oats, ears of corn, or even grass by the wayside, or hay from the wagon, which can be provided for the emergency. Forgetting his whim, he will generally start without trouble. Another good way is to do something not harmful, but new; as filling his mouth with loose dirt, which a desire to get rid of will divert his thoughts, and before he knows it he will be jogging unconsciously along. We have often seen this done with most satisfactory success. Sometimes, if one can spare the day, it is best to wait till, from weariness and hunger, the animal submits to your will, and the triumph in this instance is generally complete.

THE WHITE HAIRS that often appear on horses from the use of wear of saddle or harness are often unsightly. A correspondent of the *Mass. Plowman* recommends the following remedy which is certainly a very simple one: Take a piece of lard, large enough to give the spot a thorough greasing; rub the same with the hand until it becomes right hot, repeating the operation at least three or four times, and the white hairs will soon come out and hairs of natural color take their place. I have tried this on several horses, and I never knew it to fail. I think the best time to do it is in the winter, before the new coat starts.

OVER-LOADING DRAFT HORSES.—The cruelty practiced toward draft horses in over-loading the trucks, drays and carts to which they are attached, is much more frequent than the excessive punishment of blows administered. Toward the former abuse the attention of the Society for the Prevention of Cruelty to Animals is seldom directed, although it is a matter forced upon the attention of humane persons outside of the Society nearly every day.

TAR FOR CRACKED HOOF.—Tar is an excellent application for hard, dry and cracked hoofs. It softens and penetrates the hoof, and gives a bright, clean appearance; it also closes the cracks. Once used, the hostler will never be without it. Apply once or twice a week.

HORSE-SHOEING.—In shoeing horses that are employed upon the pavements in Boston a cushion of India-rubber has of late been placed between the shoe and the hoof with satisfactory results.

HINTS ON COLTS.—1. Remember that the early part of the life of a colt determines in a great measure whether, at maturity, the animal will be highly valuable or worthless. 2. Observe carefully and early how a colt carries his feet, his fore feet in particular. If he inclines to carry them too near the ground turn him into a pasture which has a very rough surface. In this way he will get in the habit of raising his feet high. 3. If he inclines to point his toes down, so as to make him likely to trip, he ought to be shod early, and the shoes should be made thick before and thin behind, to give him a habit of raising his toes. 4. By all means use kindness and gentleness towards a colt, so that he may become docile, fearless, and put confidence in his master.—*Ex.*

FEEDING HORSES TOO MUCH HAY.—Of all our domestic animals, there are none that require more systematic care than the horse. A horse should be fed regularly, and in moderate quantities, and worked judiciously. A horse fed in this way may be kept at a moderate cost, and will be more healthy and perform more labor, than if fed highly, or as many we know of are in the habit of feeding their horses. They will surely eat enough to injure them if they can get it. When hay is kept constantly before them, horses are apt to spend their time in throwing it around tippy-turvey in the rack; they soon become dissatisfied with their food, and lose their keen relish for it. The general practice should be to feed regularly three times a day.

USEFUL INFORMATION.

How to Varnish in Cold Weather.

When varnish is laid on a piece of cold furniture or a cold carriage-body, even after it has been spread evenly and with dispatch, it will sometimes "crawl," and roll this way and that way as if it were a liquid possessing vitality and the power of locomotion. It is sometimes utterly impossible to varnish an article at all satisfactorily during cold weather and in a cold department. In cold and damp weather, a carriage, chair or any other article to be varnished, should be kept in a clean and warm apartment where there is no dust flying, until the entire wood-work and iron-work have been warmed through and through, to a temperature equal to that of summer heat—say eighty degrees. That temperature should be maintained day and night. If a fire is kept for only eight or ten hours during the day, the furniture will be cold even in a warm paint-room. Before any varnish is applied, some parts of the surface which may have been handled frequently, should be rubbed with a woolen cloth dipped in spirits of turpentine, so as to remove any greasy, oleaginous matter which may have accumulated. Table-beds, backs of chairs, and fronts of bureau drawers, are sometimes so thoroughly glazed over that varnish will not adhere to the surface, any more than water will lie smoothly on recently painted casings. The varnish should also be warm—not hot—and it should be spread quickly and evenly. As soon as it flows from the brush and spreads evenly, and before it commences to set, let the rubbing or brushing cease. One can always do a better job by laying on a coat of medium heaviness, rather than a very light coat or a covering so heavy that the varnish will hang down in ridges. Varnish must be of the proper consistency in order to flow just right and to set with a smooth surface. If it is either too thick or too thin one cannot do a neat job.

Insect Wonders.

The recent very general introduction of the microscope is adding largely to the number of explorers into the *minutiae* of Nature, and new and interesting facts are constantly being brought to light, especially in the insect world. We have here a case in point, which if not absolutely new, will certainly be both new and interesting to most of our readers. We copy from the *Pupils' Gazette*—

A few days ago, while we sat down under a wide spreading oak, to enjoy its cool shades, and soon were much interested in watching the process of the "Measuring Worm," with which the bushes and trees were covered.

Every few minutes one would suddenly drop from a leaf above, letting itself down by a fine silken web, or thread; but would, invariably, after exploring a little on the ground, return, by its thread, to the same leaf, drawing itself up by it.

After seeing this performed by a number of them, and noticing that they left the coiled web on the leaf, we examined it with a strong magnifying glass, and found by getting hold of the two ends, we could pull it all out into one straight thread. We then examined and unraveled another, and found it to be looped up into a perfect chain stitch, precisely such as is made by a single thread sewing machine.

This led us to watch with our glass, the process of this wonderful mechanic in drawing itself up. It would catch the thread with its feet, then stretch up its head, catching the thread still higher up, pulling itself up, forming a slack; then with its feet, put through a loop, which it would hold with one of its numerous feet, till it again grasped the thread above, pulled itself up again, looping up its thread, till it returned to the leaf to which it was attached. It then deposited the coil and left for other parts.

How wonderful and how perfect are all the works of nature. Even the worm teaches us, and many animals, birds and tiny insects manifest more skill than is ever attained by the most skillful human mind.

TRANSMISSION OF SOUND.—The transmission of sound through solid metallic tubes is so perfect that conversation has been maintained in a low tone between the ends of one of the Paris water pipes, 3,120 feet long. The velocity of the transmission of sound is greater, by four to sixteen times, in metal, than air, and in wood, as computed by Chaldini, from ten to sixteen times greater, which is not commonly known. Rock conveys sound so much faster than air that the ear, applied to a stratum of rock in which blasting is being done at a distance, will perceive two distinct reports; that conveyed through the rock first, and afterward the ordinary report in the atmosphere. It has been found that the velocity is also proportioned to the loudness of the report, other things being equal. With 2,000 pounds of powder a report traveled 967 feet in a second; with 12,000 pounds, 1,240 feet.

NEW ZEALAND WOOD.—There are many woods in the Islands of New Zealand well suited to the highest productions of the cabinet maker. Amongst others is one called by the natives, *Totere*. It is of a peculiar knotted grain of singular beauty, and varied in its character in a remarkable manner. The color is no less rich and effective than the grain, and this wood besides being ornamental in the highest degree is also easily worked and very durable.

Oil Among the Ancients.

The ancients knew no method of refining oil. As a great luxury, they mixed it with perfumes, such as essence of roses and sandal wood; but this rather detracted from than added to the burning properties of the liquid, and all that was obtained by the process was an increase of fragrance and a diminution of light. The dwellings of wealthy men who expended extravagant sums upon scented oils would not have borne comparison in point of lighting with the grimest top-room of a gas-lit public house. The gold and silver lamps, hung by slender, well wrought chains to marble pilasters, only yielded at their best a lurid tapering flame, that gave out an enormous deal of smoke, fluttered in the slight breeze, and went out altogether at a gust of wind. Neither was it possible to steady the light by closing the apertures through which the air came; for, had Roman or Grecian houses been possessed of glass windows, they would soon have become uninhabitable.

The fresco paintings of Pompeian villas, the delicate colors on the walls of urban palaces, would in less than a month have been hopelessly coated with lamp soot. At the end of an hour's conference of an evening, a party of noble Romans would have resembled a congregation of chimney-sweepers. A tunic-dyed in Tyrian purple would have acquired a mourning hue in no time.—*All the Year Round*.

SOAP POWDERS, WASHING POWDERS, DRY SOAPS, ETC.—Under these and similar names, a vast variety of articles are now offered for sale which are said to possess wonderful detergent powers. They are all "old friends with a new face," consisting of soap, soda, either caustic or carbonated, and in some cases, ammonia. The dry soap is not, as its name would imply, an ordinary soap simply freed from the quantity of water with which it is ordinarily accompanied. It consists of a palm-oil soap, saponified in the usual manner with caustic soda, and freed from moisture by treatment with strong brine. In this manner it is rendered so hard and dry that it is capable of being ground to powder. It is then mixed up with caustic and carbonated soda in various proportions, according to the fancy of the manufacturer. Washing pastes are caustic soda lye, thickened with farina. Extract of soap is simply carbonate of soda, reduced to a fine powder without expelling its water of crystallization, and mixed with a little soap and palm-oil. The value of these articles may be easily determined by an ordinary alkalimetric operation.

SULPHATE OF QUININE BETTER THAN CARBOLIC ACID.—Solutions of gum arabic and paste made from flour soon mould and sour, and finally lose their adhesive property. To prevent this, carbolie acid has been used; but the odor of the preventive is so exceedingly unpleasant that it is seldom used. It is said that sulphate of quinine is equally as effective, while it imparts no bad odor of its own; and by analogy it is safe to suppose that the same salt could be used to equal advantage in writing ink, mucilage and glue.

CHEMICAL CHANGES.—The addition of an atom of water to starch converts it into sugar; the subtraction of an atom from alcohol converts it into ether. But perhaps the most curious change produced by the removal of an atom of water from a body has been recently discovered by Dr. Matthieson, of London. Morphia, the well-known active principle of opium, is commonly used to allay vomiting, and very often performs the duty very effectually. But when morphia has been heated with hydrochloric acid, and an atom of water has been thereby removed, it is changed into the most active emetic known. It is not necessary to swallow it to produce the effect; a very small quantity introduced under the skin, or even, it seems, spit upon the hand, is quite sufficient to produce vomiting, which, however, soon subsides, and leaves no nausea afterwards.

WILLOW WOOD.—In England there is no wood in greater demand than sound willow; it is light, smooth, soft, tough, will take a good polish, and does not easily burn. It will bear more pounding and hard knocks without splinter or injury than any known wood, and hence it is used for cricket bats, and whenever it can be obtained, for the floats of paddle steamers, "strouds" of water wheels, brake-blocks for luggage and coal trucks, the sides and bottoms of carts and barrows, where wear and tear are greatest. To the wood-turner it is invaluable, and were it grown as timber, and obtainable, it would be used for very many purposes to which foreign timber is now applied, and that, too, with considerable advantage both to producer and consumer.—*Cabinet Maker*.

LIQUID BLUE.—Take half a pound of the best double oil of vitriol, mix one ounce of Spanish indigo pounded very fine, scrape in a little chalk; have an iron pot half full of sand; set this on the fire when the sand is hot, put the bottle in, and let the vitriol, etc., boil gently for a quarter of an hour; take the whole off the fire, and let it stand for twenty-four hours, and then bottle it for use.

POLISHING OAK.—Slightly oil the work with linseed oil, and then rub off; then make a paste of whitening and paraffin oil, colored with yellow ochre, or something darker if necessary for the color of wood. After the wood is well filled in with this paste, it must be well rubbed off clean, and let stand two or three hours before the polish is applied.

GOOD HEALTH.

Open Windows at Night.

Very much has been written on this subject, and written unwisely; the facts are that whoever sleeps uncomfortably cool will get sick. To hoist a window sky-high when the mercury is at zero is an absurdity. The cooler a sleeping apartment is, the more unhealthy it becomes, because cold condenses the carbonic acid formed by the breathing of the sleeper. It settles near the floor and is rebreathed. Hence, we must be governed by circumstances; the first thing is, you must be comfortably warm during sleep, otherwise you are not refreshed, and inflammation of the lungs may be produced, and life destroyed within a few days. An open door and an open fire-place are sufficient for ordinary purposes in cold weather.

When outer windows are opened, it is well to have them down at the top two or three inches and up at the bottom for the same space. In miasmatic locations—and those are along water courses, beside mill-ponds, marshes, bayous, river bottoms, flat lands, and the like—it is important, from the first of August until several severe frosts have been noticed, to sleep with all external doors and windows closed, because the cool air of sunset causes the condensation of the emanations which were caused by the heat of the noon day sun to rise far above the earth; this condensation makes the air "heavy" at sundown, made heavy by the greater solidification of the emanations by cold; and resting on the surface of the earth in their more concentrated and malignant form, they are breathed into the lungs, and swallowed into the stomach, corrupting and poisoning the blood with great rapidity.

By daylight these condensations are made so compact by the protracted coolness of the night, that they are too near the surface of the earth to be breathed into the system; but as the sun begins to ascend, these heavy condensations, miasmas, begin to rise again to the height of several feet above the ground, and are freely taken into the system by every breath and swallow; hence the hours of sunrise and sunset are the most unhealthy of the twenty-four in the localities named; and noontide, when the sun is hottest, is the most healthy portion of the day, because the miasma is so much rarefied that it ascends rapidly to the upper regions.

The general lessons are, 1st. Avoid exposure to the out-door air in miasmatic localities for the hours including sunrise and sunset. 2d. Have a blazing fire on the hearth of the family room at those hours, to rarify and send the miasma upwards. 3d. Take breakfast before going out of doors in the morning, and take tea before sundown; then being out after night is not injurious.

EXPPOSED ARMS.—A very distinguished Paris physician says: "I believe that, during the twenty years that I have practiced my profession, twenty thousand children have been carried to the cemeteries, a sacrifice to the absurd custom of exposing their arms. Put the bulb of a thermometer into a baby's mouth and the mercury rises to ninety degrees. Now carry the same to its little hand; if the arm be bare and even cool, the mercury will sink to fifty degrees. Of course, all the blood that flows through these arms must fall from ten to forty degrees below the temperature of the heart. Need I say, when these currents of the blood flow back to the chest, the child's vitality must be more or less compromised? And need I add that we ought not to be surprised at the frequent recurring affections of the tongue, throat, or stomach? I have seen more than one child, with habitual cough or hoarseness, entirely relieved by simply keeping the hands and arms warm."

ANTIDOTES FOR POISON.—Commercial oil of turpentine is a good antidote to poisoning by phosphorus. The two substances form a compound in the stomach resembling spermaceti, and this can readily be removed from the system.

Laudanum or other anodyne is sometimes taken by mistake or otherwise in excess. Swallow strong coffee or the whites of several eggs instantly; all these things are to be done while the doctor is coming. Let every family remember that sweet oil, the whites of eggs and strong coffee antagonize a larger number of poisons than perhaps all other things together.

If laudanum, or any other poison not burning the throat, is taken and is promptly discovered, the best plan is to get it out of the stomach instantly, which is done by stirring a tablespoonful of ground mustard in a tumbler of water, and drinking it down at once; almost before it is down the whole contents of the stomach begin to be ejected.

VEGETABLE SPORES IN THE BLOOD.—Prof. Richardson, of Philadelphia, several years ago, in the course of his experiments to determine whether bacteria (vegetable spores) pass from the stomach into the blood, swallowed 4 ounces of water which contained, according to his estimate, 27,000,000,000 of these minute organisms. In half an hour he discovered them in abundance in a drop of blood taken from the end of his finger. To swallow at a single gulp twenty times as many vegetable spores as there are human inhabitants on the earth, is but a small exploit for a modern scientist.

How to Prevent Spring Diseases.

From Dr. Hall's new work, "Health by Good Living," we extract the following valuable hint: It is an indisputable, physiological truth that if the instincts of nature were yielded to in the spring; were cherished in her desire to take less and less food as the weather grows warmer, as they are yielded in the autumn in taking more, a very large amount of the disease of spring and summer would be avoided. The great practical lesson to be learned in reference to the subject, a question of health and disease, yes, in multitudes of cases, a question of life and death, simply this: As the winter passes, and the balmy spring time comes on, do nothing to increase the appetite; eat no more than is called for; do not be uneasy because you have little or no relish for your food; eat less and less every day. The very best way to increase your pleasure of eating is to change the quality of food; use articles less carbonaceous, less warming; send from your table the pork and bacon, and fat meats, oils, and snags, starches and sago, and the tapioca pudding, and the dumplings, and the rich pastries; get hold of the early "greens," the spinach, the salads, the turnip-top, the radish, the early berry and the daily fruit, and lean meats; pay increasing attention to the cleanliness of the skin; be more in the air; sleep in better ventilated rooms; let your windows be raised high at night, your inner door be left wide open.

SUMMER CLOTHING.—For all persons, especially invalids, and those who take cold easily, a thin material of woolen ganze next to the skin is safest and best, because—

First, it is a non-conductor, carries heat from the body more slowly than cotton, linen or silk; all colds are caused by the body becoming colder than natural, especially if it is made colder rapidly, and woolen material next the skin is the best thing known to prevent this rapid cooling, especially after exercise which has caused perspiration, and does not cause that disagreeable sepulchral dampness which wet linen does when it comes in contact with the skin.

The warmer the weather the more need for woolen next the skin; hence British sailors are required to wear woolen next their skin in tropical latitudes, in summer, as the best observed precaution against disease.

All garments worn next to the skin during the day should be removed at night and spread out for thorough airing and drying.

Cotton is the best material to be worn next the skin at night. All changes from a heavier to a lighter clothing in summer, should be made by putting on the lighter clothing at the first dressing in the morning.

It is greatly safer for children, for invalids, and for old persons, to have too much clothing than too little.

FAT PEOPLE.—Not long ago, a gentleman of threescore, who had scarcely ever been sick in his life, thought he was too fleshy and began to Bantamize. He succeeded famously, and boasted to his friends that he had got rid of ten pounds in a few weeks. A little later he was attacked with a painful and dangerous malady, from which he has been suffering more than a year.

If a man can sleep soundly, has a good appetite, with no unpleasant reminders after meals, the bodily habits being regular every day, he had better leave himself alone, whether he is big as a hoghead or as thin and dry as a fence rail.

Several cases of Bright's disease have been reported by medical men of reputation as a direct result of practicing Bantam's plan for getting lean. The very best and safest way to get rid of fat is to work it off. This may be aided by eating food which contains a large amount of nitrogen and a small amount of carbon.

Nitrogen food is that which gives strength, power to work, as lean meats; carbonaceous foods are those which make fat, such as cheese, potatoes, rice, corn, peas, beans, tapioca, arrowroot, cornstarch, milk, sugar, syrup, and all oily and fat food. Raw fruit and berries largely eaten are great aids to reducing weight.

But, after all, the great reliance should be on exercise and work in the open air. Barclay, the great English pedestrian, who performed greater feats than Weston, lost ten pounds in two or three days' walking, and was never the worse for it.—*Hall's Journal of Health*.

NEW PRESERVATIVE FLUID.—The following are the ingredients of a liquid by means of which the organs of the body that have become absolutely offensive, from decay, may be treated so that they can be examined for marks of injury or signs of disease. The fluid consists of a mixture of iodine one drachm, methylated ether (of specific gravity .720) ten fluid ounces, absolute alcohol one fluid ounce, and strong sulphuric acid four fluid drachms. The action of the solution seems to be that the iodine deodorizes, while the sulphuric acid engages the water and the alkaline products of decomposition and produces the necessary firmness of structure. The ether escapes, being simply the fluid dissolvent for the other agents.

LIEBIG ON ALCOHOL.—As Professor Liebig is so often quoted in this connection in favor of drinking alcoholic beverages, we will close by adding a quotation from the same great chemist. Says he: "Of spirits, he who drinks them draws a bill on his health which must always be renewed, because, for want of means, he cannot take it up. He consumes his capital instead of his interest, and the result is the bankruptcy of the body."



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STBONG, J. L. DOONE.
PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, April 27, 1872.

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Double Sheet, Next Week.

Our next issue will consist of 24 pages and contain the list of premiums offered by the California State Agricultural Society for the Exhibition of 1872. Extra copies will also be printed for circulation as sample copies. This arrangement will also afford us an opportunity to accommodate some delayed advertisements as well as an extra amount of reading matter.

THERE was an independent old lady who, speaking of Adam's naming all the animals, said she didn't think he deserved any credit for naming the pig—any one would know what to call him.

THE good farmer is proved such by the steady appreciation of his crops. Any one may reap an ample harvest from a fertile virgin soil; the good farmer alone grows good crops at first, and better afterwards.

ONLY good farming pays. He who sows without reasonable assurance of good crops, annually, might better earn wages of some capable neighbor than work for so poor a pay master as he is certain to prove himself.

HOTEL.—A report is current that parties from San Francisco intend to put up a sixty thousand dollar hotel in Santa Barbara, and they are looking up a suitable location for it.

Late Frosts—Vineyards.

From nearly every section of the State we hear of the late severe frosts as damaging, to a considerable extent, the young fruit of the peach, apricot, cherry and plum, and in a few localities the currants, whilst a very general apprehension seems to prevail in regard to the effect likely to be produced upon the vineyards. It is quite evident that over a large extent of the State's vineyards, the new growth which had attained from two to six inches in length, and which is the bearing wood for this year, is either entirely destroyed or greatly injured.

We learn that in Napa Valley the young shoots have turned completely black, and are hopelessly lost to production, particularly upon the low and moist lands, whilst upon the hills and in more elevated districts very little damage has occurred. This exemption of the hill lands from frost that severely affects the lower grounds is nothing new; it almost invariably occurs under like conditions of excessive moisture with rapid evaporation; and this liability of the lower vineyard sites to the damaging effects of frosts over hill lands has long since, in all countries, determined the latter as the most suitable for safe vineyard culture.

Its Effect on the Vine.

The immediate effect of severe frost on the vine is to destroy the young shoots; they turn black, wilt and dry up; sometimes only a portion of the extreme ends are thus affected, sometimes the whole shoot down to the last year's wood. It is a question with some, whether this blackened shoot should be wholly removed or only that part of it actually destroyed. There is no doubt that if we leave such buds as are not wholly destroyed, that they will produce some fruit, or at least shoots for bearing wood next year.

It must be remembered not only that grapes are always produced upon the wood of the present year, but that the bearing shoot must always proceed or start from wood of the previous year, no other shoot from any part of the trunk of the vine will ever produce fruit; it is therefore only serviceable in furnishing bearing wood for next year. Hence many conclude that where the whole of the new bearing shoot has been destroyed by the frost, that there are no more bearing shoots that can start this spring and hence an almost total loss of the present year's crop will be the certain result.

This is a Mistake.

If you will closely examine the base of the destroyed shoot, you will find a number of small, undeveloped buds that would have remained entirely dormant, but for the destruction of the main prominent bud or its shoot. These small buds are as much fruit producing as the main bud, if only brought out; because they are directly from last year's wood. On the destruction of the main first shoot, these buds will be forced out, and a fair crop, though somewhat later in maturing, will be the result.

To secure this, however, in the fullest degree, it is essentially necessary that considerable care is bestowed upon this year's growth, arising from this fact, that instead of one strong shoot like the one destroyed you will find 3 or 4 or more of these dormant buds forced at once into growth, and care must be had that only one, or two at most, be allowed to grow, the weaker ones being rubbed off as they make their appearance. This involves a considerable outlay of labor, but is essential to a fair crop of grapes the present year, and the future good condition of the vine.

If our admonition be heeded we will not hear of any general failure of the present season's grape crop from the late severe frosts; and as our vintage season is always prolonged beyond that of any other grape growing country in the world, we may look for a full maturity of the late crop.

THE weeping-willow has a romantic history. The first scion was sent from Smyrna, in a box of figs, to Alexander Popo. General Clinton brought a shoot from Pope's tree to America, in the time of the Revolution, which, passing into the hands of John Parks Custis, was planted on his estate in Virginia, thus becoming the progenitor of the weeping-willow in this country.

ABUNDANT crops cannot be grown on the same land in succession unless fertilizing matter is returned to it in equivalent proportions to those taken away.

The Hyde Steam Plow.

We had well nigh lost sight of this invention, since the results of its operations in the tule lands in Sutter County, last fall, until we were once more reminded of its existence by a notice in the Sacramento Union detailing the result of another successful trial, a few days since at Odert's ranch, near Brighton, where some sixteen acres were most thoroughly plowed—broken up and pulverized. We have since been informed that after the first rains, last fall, the plow was taken to Sacramento, and two wheels put on as steering wheels, instead of one, and the driving wheels each made 30 inches wide, instead of 15 inches, as they formerly were. It was found that the machine sunk too deep in the ground; hence the necessity of these improvements. The main principles of the plowing arrangement have been found to be correct both in tule ground and in the hard brick clay ground, in both of which it has operated, turning up the soil into a light body, that the foot sinks into as on a sponge.

The operation is entirely different from ordinary plowing, which leaves the land in a long furrow. The Hyde steam plow leaves it in short spiral furrows, angular to the line of movement—the same as putting a spade into the ground and turning it up half over as it is taken out, cultivating and lightening up the ground most thoroughly. We are informed that the Hyde plow, when compared with the published results of steam culture in England, does its work with less expenditure of steam and fuel. Though the successful accomplishment of this hard, solid fact has cost the Messrs Hyde a considerable sum of money, yet the importance of it to this country, and in fact to all prairie country, is so great that we think they cannot fail to be amply remunerated for this large outlay. We think our large land holders will do well to give the undertaking their careful consideration. Capitalists frequently hold back from encouraging new inventions, on the ground that they are visionary. That objection can now hardly be urged against this, as repeated trials and progressive improvements seem to have pretty fully demonstrated the practicability of this machine.

The original cost of the two systems give Hyde's a considerable percentage of advantage over "the rope traction system" in use in England, to say nothing of the more rapid execution of the work, or the decidedly superior pulverization effected by the former. The introduction of a successful steam plow would be one of the greatest benefits which could be bestowed upon California at this time, and we sincerely trust that Mr. Hyde may be able to accomplish so desirable an object.

Grape-Vine Pest.

We have received from Mr. G. S. Burrage, of Vine Cliff Vineyard, Yountville, Napa Co., a short section of grape vine, containing live specimens of the insect known to entomologists as *Polycaon Ovitellus*.

The insect is found only in America, and belongs to the family of Psoides; but two species of which have ever been discovered in California, the specimen sent us being one of them. Very little is known of this insect, except that here and there its ravages are occasionally heard from as affecting the vine, the perfect insect or beetle eating its way into the vine, generally near the forks of its branches, or just above or below a bud, when the branch becomes weakened and soon dies.

It is believed to be the same beetle that so persistently attacks the wild currant bush of the sea coast, and other localities in the Coast Range, and we would like to hear from our correspondent as to whether the wild currant grows in the vicinity of its present depredations. We can offer no better suggestion as a preventive of its ravages than a liberal dusting of the vines with sulphur. If any of our patrons know of a remedy better than this, we would be glad to hear from them.

THE idea of reclaiming the Colorado desert by means of artesian wells is being mooted in San Diego. It is believed by those acquainted with the topography of the country that a large subterranean stream runs under the desert, and that all that is necessary is to bore deep enough to strike it. Congress will be applied to for a land grant as a recompense for boring these wells.

Bear Valley.

EDITORS PRESS:—I see that you ask farmers everywhere to write for their paper. I am a farmer and a subscriber to the Press; therefore I attempt to write a few facts concerning our part of the country. In the first place perhaps you and your readers would like to know where our Bear Valley is situated, as there is another bear valley. It is about thirty miles west of the town of Colusa, and about ten miles from the Sacramento valley, in the Coast Range mountains. The valley is about nine miles long and from one to two and a half miles wide; there is considerable farming done here on the valley lands, and stock raising in connection with it, as we have the benefit of the hill range while our crops are growing; after harvest our grain fields afford rich pasturage for our stock, which consists of sheep, cattle, horses, hogs and mules.

We have a deep black soil that is very hard to subdue and bring into a high state of cultivation; but after it is once well broken up, it is easy to cultivate. It takes four horses on a common two horse plow to break it the first time, and but few plows will stick to the ground in the first plowing. The best plow that I have ever found for it, is Hill & Knaugh's deep tiller or single plow, which cuts eighteen inches. I can plow a foot deep with six good horses or mules, and then my land is completely conquered. I am of the same opinion as that of S. P., of Marysville, in regard to deep plowing. I tested that to my full satisfaction last year, when I raised as good grain as I ever did in California, but not so much to the acre, as the season was very dry and crops a failure nearly all over Colusa county.

Our wool growers of this valley got caught in engaging too soon; they got from thirty-seven to forty cents. Last fall some lost by holding too long; the wool grower has his trouble as well as the rest of mankind.

Our little valley patronizes the RURAL PRESS almost to a man. I know ten subscribers myself; our post office is Colusa, thirty miles distant. We have our mail brought by private conveyance at a cost of 6 dollars per annum for each person.

Friend L. P. Mc. was through our valley some sixteen months ago, and promised to write it up, and have a stage line established, mail contract let, and put us in direct communication with the outside world if we would only subscribe for the Press, so taking things into consideration we subscribed almost to a man; and now we have come to the conclusion that we would rather have a railroad if it is all the same to Mc. So he can build us a railroad in the place of a stage line, if it does not cost him any more (which we suppose it will not). Mc. is a brick.

We have had a severe frost of late; do not know yet what damage it has done to the wheat and other products. More anon. B. C. E. Colusa Co., April 18, 1872.

We have not the least doubt in Mc.'s sincerity, in promising to secure you a stage line and mail facilities for Bear Valley; and can only account for the delay, in supposing that he had promised so many before yours, that really he hasn't got round to you yet. We would be pleased to hear from B. C. E. as often as it pleases him to favor us.

How the Rural Affects Sleep.

A subscriber, W. B., of Salinas city, desires the RURAL PRESS stopped for a time, and gives as a reason, that he will be so situated that he will not possibly have time to read it; and to have it and not be able to read it, evidently affects him seriously, as appears in a letter of recent date in which he says: "When it comes, its matter is so tempting to read, that it robs me of sleep, which I really need more than the perusal of the paper. I am thoroughly convinced of a fact as set forth in a late number of the R. P. that people of nervous temperament need all the sleep they can take."

"I have generally found more than one objection to newspapers, but to the RURAL PRESS I find only one and this is some reading matter, generally on the left hand column of the last page, which I think would not be appreciated by the intelligent portion of the community, but you are probably better judges than I am what portion of the community is intelligent. Hoping, wishing and believing that the RURAL PRESS will be a success, I am truly yours."

WM. BRUNWELL."

It has ever been our endeavor to make the RURAL a paper that any farmer or professional man, once taking it or bringing it into his family, could not well do without afterwards. We hardly expected, however, that any man would deprive himself of his necessary sleep in order to read it; but we have evidently wrought out a case of that description, and in doing it have lost a subscriber, during a brief period of severe professional labors.

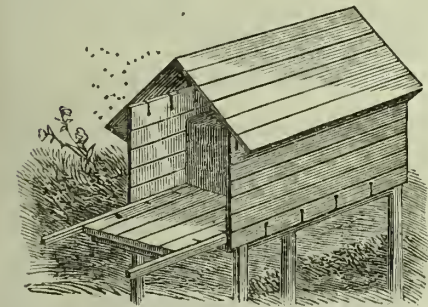
Petersen's Patent Bee Hive.

Our cut is illustrative of a new bee hive, recently patented by Peter O. Petersen, and is claimed to possess merit second to no other hive in existence. Among the paramount objects secured by this hive are the facility it affords of examining at all times the stores of the bees, and the taking away of any surplus, or supplying whatever may be wanting. Also the presence and state of health of the queen bee, in fact of the whole hive. It enables the keeper to interfere in all sorts of emergencies; increasing the number of bees, by artificially creating young swarms; and what is of especial importance to the progress of bee science, can be thoroughly examined with reference to the behavior and habits of the different bees, queens, drones and workers. It is highly commended.

The patentee, in a few remarks touching the peculiar characteristics of the queen bee, says:

"The queen makes her appearance from a fructified egg laid by another queen, which egg is deposited in a large basin-shaped cell (queen's cell), which is placed vertically, not horizontally, like the other cells, found in the hive, so that the queen is, strangely enough, reared while standing on her head, while the male and working bees are reared while lying on their backs. Sometimes, in a case of necessity, one of the ordinary small cells is transformed into a queen's cell, but it is then also put in a vertical position, as far as practicable.

A queen's egg is fructified in the same manner and resembles in form, color, size and composition entirely the eggs from which the other bees are hatched, and is laid and secured in the same manner. The maggot, however, that at the expiration of three days is hatched from the egg, is more liberally supplied with food, so that she sometimes literally swims in it; and this food is also of a different composition



PETERSEN'S PATENT BEE HIVE.

from that given to the other bees. But in order not to starve, she then knows a hole through the wall of her cell, through which the other bees then feed her. After the lapse of a short time the young queen, in the beginning of a light color, turns darker, and there is now no other change, her exterior development being finished."

The patentee of this hive can be interviewed by calling at W. H. Raymonds, Cor. of 12th and Clay streets, Oakland. The hives can be seen and examined at the office of Thos. E. Finley, No. 11 Leidesdorff street, S. F. Rights are for sale for all the States except California. Descriptive circulars sent free.

THE LATE BOTANIST OF THE DEPARTMENT OF AGRICULTURE.—The correspondence relating to the abrupt dismissal of Dr. Parry, by the Commissioner of Agriculture has been reprinted from the *Amer. Naturalist* for January, 1872. It will be remembered that the Botanist, who stands very high in the estimation of the scientific men of the United States, was dismissed from his position with less notice and consideration than is due a household servant. The botanists of the country, surprised and aggrieved, respectfully requested the Commissioner to "take into consideration the propriety of re-appointing Dr. Parry." An unfavorable reply was received, which led to further correspondence, in which the Commissioner states his reasons for his action.

From what has been published, it would appear that no charges of any degree of seriousness have been made against Dr. Parry, and that the Commissioner stands in a most unpleasant predicament. The scolding which he has received from the scientific community and the press in general, although it may not repair the present injury, will, it is hoped, prevent any such occurrence in the future.

THOROUGH preparation of land is absolutely necessary to the successful and luxuriant growth of crops.

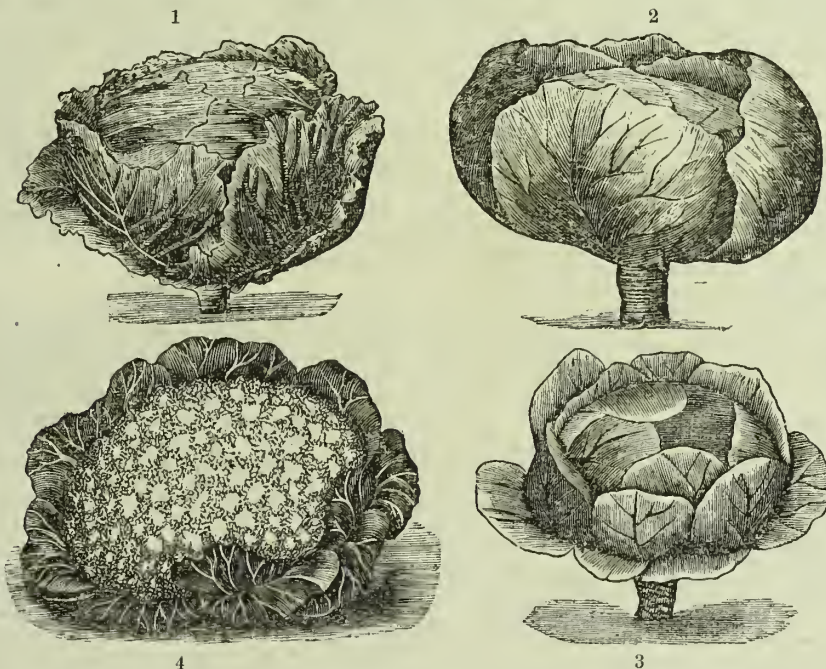
The Cabbage Family.

We herewith conclude our illustrations of the cabbage family; the object of their presentation having been to present some of the distinctive features or types that pertain to a few of the many varieties of this very nutritious and valuable vegetable. Of course with a plant that so easily hybridizes by the admixture of the pollen while the plant is in flower, there are necessarily modified forms of the types we present; but still possessing enough of the original to enable us to place them in their true position as relatives of certain branches of the grand family.

No. 1, is the early Schweinfurth, an excellent, very large and very early cabbage, of the soft-headed variety. Sown in early spring, it is in fine eating condition in July, August and September, but is not a good keeper. It never makes a solid head, but is none the less tender and crisp on that account.

No. 2, is the Marblehead Mammoth, a very large, excellent, winter cabbage, is a sure header, and ranks as one of the largest cabbages grown. The only one at all approaching it in size is Robinson's Champion; these two are justly classed as the colossi among cabbages. Give to either of these two varieties a good, strong soil and room to grow and they will often attain a weight of 55 or 60 pounds.

No. 3, the Stone Mason Marblehead, another large, solid, yet tender and excellent free-heading winter cabbage. It never attains to



the enormous proportions of the Marblehead Mammoth, but is a finer grained variety and carries but few superfluous or waste leaves, and is not as gross a feeder, fully perfecting itself in any fair garden soil. It is one of the most desirable winter varieties known.

No. 4, is a fair illustration—for a wood engraving—of the Cauliflower, the most delicate and truly delicious of all the cabbage family. There are numerous varieties consisting of early and late, large and small, tender and delicate in growth and those that are hardy and will grow well under any fair treatment. The Early Paris, is early and fine with a snow-white head. Erfurt Earliest Dwarf, is the earliest variety known, it heads low, with a pure white curd, and is the best and surest to head of any grown. Large Asiatic, a fine, large, late variety and one of the best of the late sorts. The Stadtholder, is a large, late, German variety, giving perhaps the largest and fairest head of any. The Lenormand is also one of the largest and hardiest of all. There are still other well known and excellent varieties, but our space will not admit of further enumeration at this time.

Cauliflower Culture.

The growing of the cauliflower can be said to require the same culture, soil and general management as the cabbage, to which family it is strongly allied. It is, however, a more delicate plant in its growth, and requires more care to bring it to perfect maturity. The soil should be made generously rich, fine and deep. The seeds are often sown by gardeners in the autumn, and the plants carried through the winter in warm houses for the production of very early heads; but if sown early in the spring, in any open, warm border in the valley

climate of California, very fine heads are produced for summer use.

Seed sown any time in April will give a fair head in the Autumn months, and by earthing up the soil around the stem of the plant as the head begins to form its enlargement is hastened and results in a more perfect development. Any plants that may have failed to head in autumn, in a climate like our mountain valleys, where severe frosts or snows occur, if taken up, placed in a warm, well-lighted cellar, their roots set in a good soil, will produce fair heads in the winter months.

We are under obligation to Mr. James Vick, seedsman and florist, Rochester, N. Y., for this and the illustration in last week's issue.

New Publications.

FIRE-SIDE SCIENCE.—A series of Popular Scientific Essays upon subjects connected with every-day life. By James R. Nichols, A. M., M. D., Author of "Chemistry of the Farm and Sea," and Editor of the Boston *Journal of Chemistry*. New York: Hurd & Houghton. Cambridge: Riverside Press.

We have received a copy of the above work from Bancroft & Co. The essays contained in this little volume relate to the science of home life, and the every-day affairs of individuals and families. The author, as editor of the Boston *Journal of Chemistry*, is one of the most successful and instructive writers on popular science in the country. He has a most happy manner of treating ordinarily dry subjects in a way to interest or instruct either the fireside group or those who labor in the field or shop.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.)

FOR THE WEEK ENDING MARCH 26TH, 1872.
GRAIN SEPARATOR.—Garland A. Dabney, San Jose, Cal.
VALVE FOR WATER CLOSURES.—William Smith, S. F., Cal.
FOR THE WEEK ENDING APRIL 2D.
PROCESS AND APPARATUS FOR THE MANUFACTURE OF SULPHATE OF LEAD.—H. Augustus Whiting, S. F., Cal.
MACHINE FOR CLARIFYING, MIXING AND BLEACHING LARD.—Oscar J. Backus, S. F., Cal.
MANUFACTURE OF HOSE AND TUBING FOR WATER, STEAM AND OTHER FLUIDS.—Sydney P. Cook, S. F., Cal.
STAMPING AND HAMMERING MACHINE.—George D. Crocker, Virginia City, Nev.
GRAPE CRUSHER AND STEMMER.—George Johnston, Sacramento, and William F. Johnson, Folsom, Cal.
DEVICE FOR PROPELLING CANAL BOATS.—Thomas K. McDonnell, S. F., Cal.
CLOTHES DRIER.—Anson C. Stowe, San Jose, Cal.
COMPOUND IMPLEMENT.—John C. Schlarbaum, San Jose, Cal.

FOR THE WEEK ENDING APRIL 9TH.
APPARATUS FOR OBTAINING MERCURY FROM ITS ORES.—Henry Johnson, San Francisco, Cal.
SHOE-FASTENING.—Aaron Lawson, Petaluma, Cal.
WOOD PAVEMENT.—Henry M. Stow, San Francisco, Cal.
WOOD PAVEMENT.—Henry M. Stow, San Francisco, Cal.
PREPARING BLOCKS FOR WOOD PAVEMENT.—Henry M. Stow, San Francisco, Cal.
PROPELLER-WHEEL.—Rasmus Johnson, San Francisco, Cal.
MACHINE FOR MAKING CONCRETE PIPES.—George I. Eagan, San Francisco, Cal.
ARTIFICIAL STONE.—George L. Eagan, San Francisco, Cal., assignor to himself and W. H. Van Doran, Springfield, Ill.
FURNACE FOR SMELTING ORES.—Theophilus L. R. Schenker, Salt Lake City, Utah Ter.; antedated April 3, 1872.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible by telegraph or otherwise at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Feed for City Dairy Stock.

A dairyman who has six acres of land, all of which can be irrigated, wishes to know how he can raise from it the most and best food for a stock of dairy cows, kept for supplying milk to city customers.

In the south of France, and in northern Italy, in the vicinity of cities where large quantities of manure can be cheaply obtained, we have seen large dairies, for the supply of city milk, in which the food was obtained from an incredible small area of ground by cropping the same as follows: On one-half of the whole ground Indian corn is planted closely in drills, towards the last of April. When the corn has attained a height of 4 feet they commence cutting and feeding it green. When fully grown and just before the corn sets on the ear the whole is cut, put up in small bundles and allowed to dry with little or no care or hurry in the curing, but producing an enormous yield of fodder, of an excellent milk-producing quality.

The other half of the land is sown in spring with millet, which yields 5 tons an acre. This too, is fed green along with the corn to give variety, and the remainder of the crop cut and cured while yet in bloom. It is always a sure crop and cows are very fond of it. Early in the fall, as soon as the corn and millet are gathered in, the whole ground is plowed and immediately sown with rye, which is soon up with a rank growth; and as there is no snow to cover it in winter, it is used for winter and spring pasture, till the ground is again wanted for corn and millet; the corn of one year occupying the millet ground of the previous year; and this is all the rotation given it.

It is a very severe system of cropping, and could not be long continued and maintain the fertility of the soil, without the application of abundant manures, but these are annually given to the corn crop only, and the yield of green and dried food of the very best quality for milch cows is simply enormous. Therefore to our correspondent we would say—act upon the foregoing idea, let irrigation supply the water necessary to start and bring on the crop for winter pasturing, and substitute if needs be some other grain or grass than millet, and perhaps other crop than corn, but let it be so managed that green food in abundance shall be almost constant the year round.

Capitol Park, Sacramento.

The State has appropriated one hundred thousand dollars for the purchase of five blocks of land, lying between the State House and the Governor's Mansion, in Sacramento City. The State owns five blocks, and with the additional five, together with the streets, will constitute a park of about forty acres. This is as it should be. Every State House should have a park around it, because it will not only add beauty to the capitol, but will be a beautiful place for strangers to visit, as well as the city's inhabitants. The city gave to the State five blocks, and it will not hurt the State to give five additional ones. We understand that it is not the intention to fill the park up to the city grade, but to slope from the capitol and terrace. This plan will give a much more beautiful effect, than to place the entire grounds of the park upon a dead level.



Ever.

Ever and ever the world goes round,
Bearing its burdens and crosses;
Ever and ever the years roll on,
With their tide of sorrow and losses.
Ever and ever the book of life
Bears upon its pages
The weary, weary lay of the heart,
Sung through all the ages.

Ever and ever with outstretched hands
We grasp for a golden morrow;
Ever and ever the billows of time
Are lighted with bitter sorrow.
Ever and ever the lips smile on,
That the world may walk in blindness;
Little they know of the heart's wild woe,
When the face looks but with kindness.

Ever and ever the shadows fall
Over the golden mosses;
Ever a gleam from Paradise
Lightens our cares and crosses.
Ever and ever the morning dawns
On hopes that are breathed in gladness;
Ever and ever the night brings in
Its tide of bitter sadness.

Ever and ever the eye of God
Looketh upon us with pity;
And ever the light is shown to us,
That gleams from the Golden City.

"Our Bashful Girls."

Now-a-days bashful women are scarce—that is, women and girls imbued with that real old-fashioned commodity (or incommodity which you will). Sure enough you are constantly seeing girls, or young ladies, who are overburdened with a sense of their bashfulness.

If you ask them to sing, or to play, or in any way by their good sense to add to the pleasure of any person, or persons, they are overwhelmed with their false modesty; they simper and giggle—they can't sing (and a great many tell the truth though they know it not), or they don't like to play—they are ashamed; and after a great many objections, all easily overruled, they are led blushing up to the piano. Pshaw, girls! I tell you it's all nonsense. Sometimes for the effect, you know, you are begged to sing or play, and you cover your modest face with your jeweled hands or lace handkerchief, all the while exulting over the excellent chance you have to display your white, toy hands to your many admirers (men of course) or your cobwebs to your envious friends (and they are women), meaning, when you have been persuaded sufficiently long to gratify them, and yourself, with your arraying accomplishments.

Any time you have a mind, you may go into any store on any of the principal thoroughfares, and you will observe many damsels, painted and powdered, be-ruffled and be-flounced, their dresses made so short as to expose their feet and ankles, and on occasion of a puff of wind a little more of nature than any modest woman would care to exhibit. Do you think they exhibit great marks of bashfulness?

Not a bit of it. I fancy I hear some of you ejaculate, while your faces express your utter horror, "How extremely strong-minded! How exceedingly vulgar!"

How strong-minded? Because I assert there are so few of you who possess the real genuine essence of modesty.

How vulgar? Because I expose your very gross faults.

Ah, me! girls, if you only would accept good advice when it is offered you, and try to profit by it, instead of sneering and scoffing as you do.

But no. You must powder, and paint, and pad, and dye, and in every possible way distort God's handiwork. If you would only cultivate some real bashfulness and forever throw aside the false.

How well one might enjoy themselves, if, in a company the young women were possessed of that true, innate modesty. Be polite, suave and obliging, and you will then be able to thoroughly enjoy yourself and contribute to that of others.

ERNEST NORTH.

A MISEN's first rule in arithmetic is addition, but his heirs generally begin with division.

Physiology a Study for Women.

(From the opening lecture in the Ladies' Course on Physiology, at the University of Edinburgh, by Professor Bennet.)

I have long formed the opinion that physiology, besides being essential to the medical student, should be introduced as an elementary subject of education in all our schools—should be taught to all classes of society.

It is an ascertained fact that 100,000 individuals perish annually in this country from causes which are easily preventable, and that a large amount of misery is caused by an ignorance of the laws of health. Women, in all classes and degrees of society, have more to do with the preservation and duration of human life, even, than men. It has been argued that, inasmuch as even the brutes know instinctively how to take care of their young, so must women be able to do the same. But the human infant is the most helpless of creatures, and nothing is more lamentable than to witness the anxieties and agony of the young mother as to how she should manage her first-born.

In no system of education are women taught the structure and requirements of the offspring which will be committed to their charge; and certainly, no error can be greater than to suppose that the senses and instincts are sufficient for teaching man as to his physical, vital, and intellectual wants. The enormous loss of life among infants has struck all who have paid attention to the subject, and there can be no question that this is mainly owing to neglect, want of proper food or clothing, or cleanliness, of fresh air, and other preventable causes.

Women are the wives and regulators of the domestic households. They also constitute the great mass of our domestic servants. On them depends the proper ventilation of the rooms, and especially the sleeping rooms, in which all mankind, on an average, spend one-third of their lives. Children are too often shut up all day in crowded nurseries, and when ill, are subjected to numerous absurd remedies before medical assistance is sent for. Their clothing is often useless or neglected, the dictation of fashion rather than of comfort and warmth being too frequently attended to. The cleanliness of the house also depends on women, and the removal of organic matter from furniture and linen, the decomposition of which is so productive of disease. Further, the proper choice and preparation of food are entrusted to them. All these are physiological subjects, the ignorance of which is constantly leading to the greatest unhappiness, ill health and death.

Among the working classes, it is too frequently the improvidence and ignorance of the women which lead to the intemperance and brutality of the men, from which originate half the vice and crimes known to our police offices and courts of justice. Additional arguments for the study of physiology by women may be derived from the consideration of—the effects of fashionable clothing—the tight lacing, naked shoulders, thin shoes, high-heeled boots—often subversive of health; the proper employment of women, which should be regulated with regard to their conformation and constitutions; nursing the sick, which is one of the most holy occupations of women, and which would be much more diligently done if they possessed physiological knowledge. Hence women in all ranks of society should have all branches of physiology taught to them. It should be an essential subject in their primary, secondary, and higher schools. So strong are my convictions on this subject that I deem it a special duty to lecture on physiology to women, and whenever I have done so, have found them most attentive and interested in the subject, possessing indeed a peculiar aptitude for the holy, and an instinctive feeling, whether of servants or mistresses, wives or mothers that that science contains for them, more than any other, the elements of real and useful knowledge.

Rearing of Children.

In teaching your children little sweet courtesies of life, you must repeat over and over the same lessons for the first few years. It requires line upon line and be not discouraged even after seventy times repetition. The reward will come at length and you will rejoice to see the little child you have taught so laboriously acting voluntarily on principles you have instilled, requiring no prompting or correction, for courtesy has become habit.

In no place is the distinction between the refined and ill-bred more marked than at the table. If your children are not taught early politeness here, you must prepare yourselves and them for a thousand mortifications in future life, and must look to see them regarded as annoying and disagreeable by those whose good will you may most desire to secure. "A child left to himself bringeth his mother to shame."

However humble your position, though your family gather about a table of pine instead of mahogany, your children may and should be taught the same lesson of respectful behavior. Let your children learn to sit quietly until all older than themselves are helped, and do not begin to compromising with some little insurgent by a lump from the sugar bowl. If you do, it will by no means be "the beginning of the end." As they advance in years, encourage them to join pleasantly, but always modestly, in the family conversation around the table. Let the meal time be one of the most cheerful and heavenly hours of the day. Come to the festive board with something good to communicate, edifying, administering grace to those present—that every thought, word and deed may be "apples of gold in pictures of silver." The

table spread with heaven's choice bounties is the appropriate place to inculcate order, sobriety, courtesy, politeness of manners, gentlemanly deportment; strict temperance in all things.

The family is a little book,
The children are the leaves,
The parents are the cover, that
Protecting beauty gives.

Winter in Los Angeles.

The "City of Angels," in the winter season possesses all the charms necessary to make a poet's paradise. It is a garden spot, where the rose and cactus bloom side by side; the heliotrope and orange-blossom blend their fragrance, verbenas, magnolias, and flowering vines bud and bloom during the warm December days. Indeed, in the estimation of its earliest inhabitants, who gave it its name, it must have been more than the poet's "clime of the sun," for they called it *Pueblo de la Reina de los Angeles*—the Town of the Queen of Angels.

Around half the city of Los Angeles is a plateau of rich land overlooking the plain whereon, in future time, the palatial residences of the wealthy will be built. From the brow of this semi-encircling chain of hills the eye rests upon a grand and magnificent picture of natural beauty. The city, immediately below—its relics of early mission labor and enterprise, the adobe walls and one-story houses, with deep verandas and more modern architecture, side by side; the long streets, shaded with willows and cottonwoods; the profusion of pepper-trees in private gardens, shaking their delicate foliage coquettishly to every tiny breath of incoming sea-breeze; gardens glowing in fruit and flowers whose hues were born of the tropics, and whose perfumes load the atmosphere, far-reaching vineyards, extensive groves of orange, here and there the bouds and curves of Los Angeles River, and beyond, the mists and haze of Indian summer, covering all the landscape; while, still beyond, the dim blue outlines of the Pacific—all this is offered to the eye almost any day during the winter months, from the bench of rolling land back of the city.

Santa Monica.

One of the fashionable resorts for the Angelites—past the noted asphaltum beds, across the loveliest rolling meadow lands in the State—is Santa Monica, down by the sea-coast. It is a narrow defile, widening and winding out to the sea, sheltered on either side by precipitous banks, overgrown with large cottonwood and sycamore trees. It is a small cove, opening on to the smooth beach, of about three acres of grass-plot. Large trees shade the little nook, and fairly blockade it, as it winds farther away from the beach, up to the plateau of unbroken and numberless acres of rich grazing land. It is pretty enough for reproduction by the best artist in the world. It is a resort for invalids, who camp out under the friendly shade of the big trees, far enough up to be out of the reach of the breakers; bathe in the surf, and loiter up and down the beach. Families have lived at Santa Monica, in this way, for months at a time. It is also a favorite locality for picnic parties; just enough of ocean; just enough breadth of expanse, the little brooklet of pure water, tiny enough to make "babbling music;" enough wild game up the hill-sides, and over the summits; enough of ocean surges, its fitful moods, together with a most fascinating atmosphere, make it one of the loveliest spots in California.

LISLE LESTER.

A Cheerful Heart.

There are some persons who spend their lives in the world, as though they were shut up in a dungeon. Everything is made gloomy and sad around them. They go on mourning and complaining from day to day that they have so little, and are constantly anxious lest what little they do have should escape from out their hands. They always look upon the dark side, and can never enjoy the good that is present, for fear of the evil that is to come. This is not right. Cheerfulness should be cultivated and when great and benevolent principles are instilled and exercised, men will be happy in spite of themselves.

There are causes enough in this world for complaints and fretfulness, if we seek them. We often travel on a hard and uneven road, but with a cheerful spirit and a heart full of praise for mercies, we may walk therein with comfort and ease, coming to the end of our journey at last in peace.—*Western Rural*.

NEVER be in too great a hurry to show yourself to the world; but lay in, first of all, as strong a foundation of learning and knowledge as possible.

DOMESTIC ECONOMY.

Good Bread and How to Make It.

Holy Writ assures us that bread is the staff of life; and our daily experience fully proves the truth of the assertion. But it is not enough to procure this staff of life in sufficient quantity; the excellence of its quality is also of great importance. The strong, healthy man may perhaps eat poor bread without experiencing any inconvenience; but the delicate child or invalid, whose impaired digestion requires great carefulness in diet, cannot pay too much attention to the quality; bread is indeed to them the staff of life. The superior nutritious properties of bread have been disputed, but the doubt has been dispelled by some chemical researches made in France testing the comparative nutriment of various edibles.

The word bread is derived from brayed grain, from the verb to bray or pound; indicative of the old method of preparing the flour. Dough comes from the Anglo-Saxon word *deowan* to wet, to moisten. Loaf is from the Anglo-Saxon *lif-ian*, to raise, to lift up, as raised bread. Leaven is derived from the French verb *lever*, to raise, as the Saxon word *lif-ian*.

The superiority of good home-made bread has long been acknowledged, yet how few families really make good bread. All bakers use alum, which is injurious to the health, and causes indigestion in delicate persons. But the alum benefits the baker in several ways; it causes his loaves to separate evenly and without trouble, and increases the weight of the loaf, as it makes the flour absorb more water; therefore, a four-pound loaf of baker's bread will contain less nourishment than a loaf of home-made bread of equal weight.

Economy should make every woman her own bread-maker. The alum also imparts a better color to the flour, and conceals any unpleasant odor arising from damaged flour. Baker's bread dries much quicker than home-made. The reason is, that alum is what chemists call an efflorescent salt, that is, it dries by exposure to the air; common salt is deliquescent, that is, it attracts moisture from the air; therefore, bread which contains salt only, will keep moist much longer than that which contains alum. These are certainly reasons why every woman should make her own bread, or have it made in her kitchen.

How to Make Good Bread.

We propose to give a few receipts for bread making which will not fail. First we will give a receipt for making yeast. The yeast bought at the door is not always of good quality. The recipe for hop yeast given has been tested for twenty years, and rarely fails; never, if the yeast jug is perfectly sweet and the yeast properly made: Boil in a porcelain or copper-tinned kettle, two large handfuls of hops, tied in a cloth, six large potatoes sliced thin, in six quarts of water. When the potatoes are very soft skim them out, and either rub through a colander or mash fine on a plate. Take out the hops; squeeze dry, and hang away for another time, as they can be used twice. Keep the water boiling, mix one and one-half pints of wheat flour to a smooth batter with cold water, and one tablespoonful of vinegar, two of brown sugar, and one teaspoonful of salt; mix in the mashed potatoes, stir all into the boiling water, and boil ten minutes. Turn into a six-quart tin pan. When milk-warm to the touch add one teacup of yeast. Let it rise over night, then put into a stone jug.

This yeast will keep in a cellar, perfectly good for six weeks. A large teacup full will make two large loaves of bread. Be sure to reserve a teacupful to rise the yeast with the next time. Always scald the jug thoroughly and keep water in it over night, with a tablespoonful of saleratus stirred into it. This will sweeten the jug. It takes a large quantity of this yeast to rise bread, biscuit, or muffins than of distillery yeast, but the effect is quite as good.

To make bread of first-rate quality, the sponge should be made over night. Bread that has been raised three times is much the best. It is of a firm, even texture, has no fissures or cracks, and the slice presents an even surface. Here is a recipe that rarely fails: Take one quart of new milk, and add boiling water sufficient to make it warm to the touch. (Water can be substituted for the milk, but bread made without milk dries more rapidly.) Add one teaspoonful of salt, stir in three quarts of flour and one tea-cup of home-made yeast, or three tablespoonfuls of distillery yeast. Mix well together, then sprinkle flour all around the edges of the batter or sponge, leaving a small space in the middle uncovered. Set in a warm place to rise, covering with a pan. In summer the sponge will be ready to mold over before breakfast. Mix it up thick so that it can be kneaded well, and knead it half an hour or more. Chopping it with a chopping knife adds to its lightness and porosity. When well kneaded, sprinkle flour on the bottom of the pan thickly, put in the dough, and set it away for half an hour or more, but watch it closely. (Bread making should be most carefully tended, as any neglect ruins the whole. If allowed to rise too much its sweetness is gone, and though saleratus will take away the acidity, its aroma and flavor are destroyed.) When light enough turn out on the molding-board and knead thoroughly; divide into two loaves, reserving a portion for biscuit, so that the new-made loaves may not be cut that day. Mold well, put into the pans, let it rise in a warm

place fifteen minutes, then bake in a hot oven. If the oven be hot, the bread will lose less weight in baking than when the oven is slack. The batter can be baked in the morning in muffin rings, and makes delicious breakfast cakes, better than hot biscuit.

Bread made with potatoes is very nice: Boil three large potatoes, well pared, or six good sized ones; rub them through a colander into your bread pan. Rinse them through the colander with a pint of boiling water; add one quart of milk. Stir in half a pint of flour, and when the liquor is cool enough add a teacup of home-made yeast; set it in a warm place. If this is done after dinner—using the potatoes left from the table—the sponge will be ready for more flour by eight or nine o'clock in the evening. Now mix to a stiff batter, sprinkle flour over it, set to rise. In the morning knead into a stiff dough, let it rise well, then knead again, put into pans, let it rise fifteen or twenty minutes, and bake in a hot oven.

All bread, biscuit or doughnuts raised with yeast should rise after being kneaded before they are baked. If put in the oven or fried directly they are never light. The dough has had no opportunity to recover its elasticity, and cannot be as good. Common sized loaves of bread will bake in three-quarters of an hour, provided the oven is of proper heat.

Palatable as good wheat bread is, there is no doubt that eating it entirely is not conducive to health. Rye, Indian meal and coarse flour make bread that is better adapted to the development of the muscles. Boston brown bread is much used, and is far better for young children than bread made of superfine flour. It is easily made: Take two quarts of Indian meal, sifted, one quart of rye meal or Graham flour, one large spoonful of salt, one teacup of molasses, one teacup of home-made yeast, or half the quantity of brewers' yeast. Mix with hot water as stiff as one can stir it, let it rise one hour, bake in deep earthen or iron pots, which are made purposely. To avoid the thick crust produced by baking so long, boil it four hours and bake one, removing the cover before setting it into the oven.

Good bread and butter cannot be made without some experience and intelligence. Upon their quality depends half the comfort of the table, and yet full half the people in this country never taste them in perfection.—*Ex.*

ECONOMICAL COOKING IN OREGON.—There is a place in Oregon, says an exchange, called the Smoky Valley, where the people have a very curious way of cooking. They do not have the trouble of making a fire every morning when they wish to get breakfast. They just walk out with their kettles, coffee-pots, and whatever else they need, and cook at the boiling spring. The water seems a great deal better than common boiling water, and all they need to do is to have their kettles in it for a short time, and their food is nicely cooked. They are able even to bake in it. The bread is put into a tight saucepan and lowered into the boiling flood for an hour or two, and then drawn up most exquisitely baked, with but a thin rim on the crust over it. Meat is cooked here, and beans, which are the miner's great luxury. It takes but a minute to cook eggs, or to make a pot of coffee or tea; but if there should chance to be a "slip between the cup and the lip," the food would be gone beyond recovery.

PICKLED EGGS.—At the season of the year when the stock of eggs is plentiful, cause some four or six dozen to be boiled in a capacious saucepan until they become quite hard. Then, after removing the shells, lay them carefully in large mouthed jars, and pour over them scalding vinegar well seasoned with whole pepper, allspice, a few races of ginger and a few cloves of garlic. When cold they are bunged down close, and in a month are fit for use. Where eggs are plentiful the above pickle is by no means expensive, and as an accompaniment to cold meat it cannot be outvalued.

ANTS AND MOLES.—For ants, place a fresh meat bone where the ants can get at it, and they will flock to it in large numbers. When they are on it, dip it in hot water; repeat it a few times and the ants will have disappeared. For moles, dig a hole like a post hole across one of the mole holes, and in the bottom, place some rags previously dipped in sulphur. Set fire to them, and when once well on fire, cover up close with a board, and the mole hole acts as a pipe. The mole leaves.

BOHEMIAN CREAM.—Take four ounces of any fruit you choose, which has been stoned, soft and sweetened. Pass the fruit through a sieve, and add one and a half ounces of melted or dissolved isinglass to a half-pint of fruit; mix it well together; then whip a pint of rich cream, and add the fruit and isinglass gradually to it. Then pour it all into a mould; set it on ice or in a cool place, and when hardened or set, dip the mould a moment in warm water, and turn it out ready for the table.

To Cook Cod Fish, says a writer in *Western Rural*, never freshen it, but pick it up fine and put it in a frying pan with a large piece of butter and one quart of milk. Let it come to a boil, then pour in a teacup of cold milk with a table-spoon of flour stirred in it. Season with pepper to taste. The fish will salt it sufficiently.

To Brown Potatoes Under Meat.—Boil some fine, large, mealy potatoes; take off the skins carefully, and about an hour before the meat is cooked put them in the dripping pan, having well dredged them with flour. Before serving, drain them from any grease, and serve them up hot.

Hang up Pictures.

Any observing person will notice a great difference in people in the matter of furnishing or decorating their houses with pictures. Nothing adds more to the general appearance of a room than a tasty adornment of the walls with articles of this kind, whether they be photographs, chromos, engravings or oil paintings. And yet how often do we find parlors furnished with the costliest of carpets, curtains and furniture, where the walls are as bare as a side-walk, and and about as suggestive in all that pertains to matters of art and refined taste. There is evidence of wealth, but at the same time an utter lack of that appreciation of the way in which it should be used that it may render the greatest amount of return in all that redounds to culture and esthetic taste. It reminds one of the barbaric splendor and show; of a wish to astound rather than to charm; of great opportunities with feeble realizations of the fact. On the other hand, many a humble home, never guilty of entertaining a Brussels carpet or a marble top table, has such an attractive look, as one opens the door, that it seems like seeing the face of an old friend, and almost wholly because it is so tastily furnished with pictures, in appropriate positions, well fitted to the general size and height of the room. There is a cosy air about the surroundings which makes one seem at home, and a different feeling is imparted from that felt where there is more wealth exhibited, but less culture.

There is no excuse for a lack of pictures of some sort, for the cheapness of engravings and chromos place them within the reach of the poorest. It is not necessary that they should be oil paintings, or in expensive frames; even the cheaper chromos, or an engraving, or perchance a delicately tinted water sketch or crayon, may be more appropriate as compared with the furniture than one more expensive. But in these days when the engraver and lithographer have scattered the choice productions of their handicraft so cheaply all over the country, there is hardly any reason why even the humblest home may not have a variety of attractive pictures hung upon the walls to break the dull monotony of white plaster, or the stereotyped figures of paper hangings. And in the more luxurious furnished parlors, there is no excuse for a lack of pictures, save a want of proper taste in the occupants, which may be, let us charitably hope, more their misfortune than their fault.—*Cabinet Maker.*

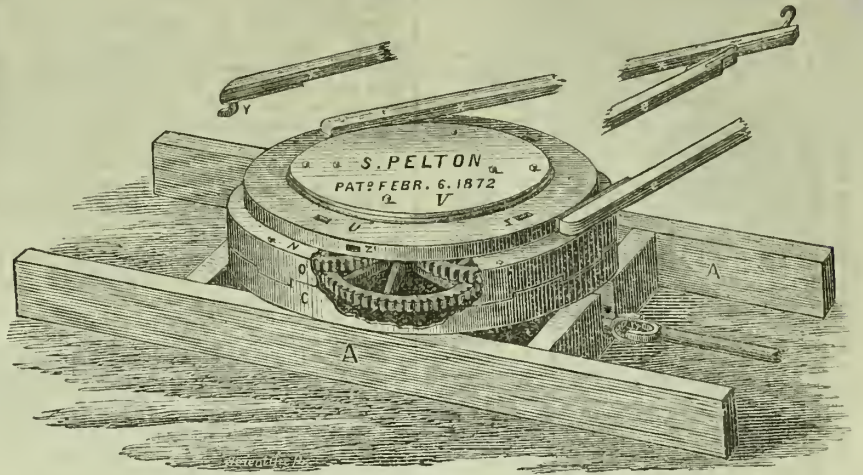
OUR BEDS.—Considering that about a third of our lives is passed in our beds, they deserve much more attention than they get. France has long been in advance of the rest of the civilized world in this respect, having really paid as careful attention in excellence in this respect as to that in cookery. The grand secret of the superiority of French bedding is to be found not merely in the existence of good springs and well-filled mattresses, but in the fact that these mattresses are pulled and re-made annually. This is the reason why beds in other countries are generally such a mockery of the French beds, which they are intended to imitate. French houses usually have a court-yard behind, in which carpets are beaten and various other domestic business is transacted, and here in fine weather may be seen the practice of mattress stuffing. An old mattress, on which heavy bodies have lain for a series of years, becomes, no matter how well filled with horse hair, nearly as springy as street-car cushions. If you want a comfortable bed, here is the unfailing receipt: First, very good springs; secondly, a thick hair mattress over them; thirdly, a thick wool mattress over that. Both mattresses should be remade every two years.

POACHED EGGS.—These are often brought to the table sloppy with water, the yolks salvy and broken, and the whole in a mussy state. The right way to do is to have the water in the flat-bottomed dish or spider, boiling, and then place it on the top of the stove where it will keep at that heat but not boil a particle. Break the eggs one by one and turn them into the water carefully, so as to keep them in nice form, the water being about an inch or two deep. Let the eggs remain two minutes, then lift each one out on a small skimmer and place them neatly side by side on a platter or on toast; and they will be handsome on the table, as well as taste deliciously.

WAFER GINGERBREAD.—Half a pound of flour, and half a pound of the coarsest brown sugar, quarter of a pound of butter, one desert-spoonful of allspice, two ditto of ground ginger, the peel of half a lemon grated, and the whole of the juice; mix all these ingredients together, adding about half a pound of treacle, so as to make a paste sufficiently thin to spread upon sheet tins; beat it well, butter the tins, and spread very thinly over them; bake it in rather a slow oven, and watch it till done. Withdraw the tins, cut it in squares with a knife the usual size of wafer biscuits, and roll each around the fingers as it is raised from the tin.

THE BEDDING of the Dutch workingman, says the *English Mechanic*, in an interesting article on Dutch industry, is made up of kapok, a silky fibre from the tree gourd of a tree known in the Indies. From the seed is obtained oil, and cattle are fed with the refuse. Neither moths or vermin will attack this material, and hence the Dutch are helped by Nature in keeping their households wholesome.

THE CALIFORNIA GIANT.



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Daily Weather Record.

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK
ENDING WEDNESDAY, APRIL 24, 1872.

Place of Observation.	Date.	Observation taken at 9 A. M.	Height of Barometer.	Thermometer.	Relative Humidity.	Direction of Wind.	Force of Wind.	Force of Wind, 10 Miles per Hour.	Force of Wind, 10 Miles per Hour, 10 Miles per Hour.	Force of Wind, 10 Miles per Hour, 10 Miles per Hour.	State of Weather.
San Francisco.	Thurs. 18.	30.03 52.92	30.03	52.92	30.03	52.92	14	Fresh	14	14	Cloudy
	Fri. 19.	30.21 54.86	30.21	54.86	30.21	54.86	14	Fresh	14	14	Cloudy
	Sat. 20.	30.14 50.79	30.14	50.79	30.14	50.79	14	Fresh	14	14	Clear
	Sun. 21.	30.14 50.79	30.14	50.79	30.14	50.79	14	Fresh	14	14	Clear
	Mon. 22.	30.16 51.79	30.16	51.79	30.16	51.79	14	Fresh	14	14	Clear
	Tu. 23.	29.99 51.85	29.99	51.85	29.99	51.85	14	Fresh	14	14	Clear
	Wed. 24.	29.97 47.62	29.97	47.62	29.97	47.62	14	Fresh	14	14	Clear
San Diego.	Thurs. 18.	30.15 46.92	30.15	46.92	30.15	46.92	4	Light	4	4	Fair
	Fri. 19.	30.12 51.85	30.12	51.85	30.12	51.85	4	Light	4	4	Fair
	Sat. 20.	30.12 51.85	30.12	51.85	30.12	51.85	4	Light	4	4	Fair
	Sun. 21.	29.95 47.62	29.95	47.62	29.95	47.62	4	Light	4	4	Fair
	Mon. 22.	29.95 47.62	29.95	47.62	29.95	47.62	4	Light	4	4	Fair
	Tu. 23.	29.95 47.62	29.95	47.62	29.95	47.62	4	Light	4	4	Fair
	Wed. 24.	29.95 47.62	29.95	47.62	29.95	47.62	4	Light	4	4	Fair
San Francisco.	Thurs. 18.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Fri. 19.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Sat. 20.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Sun. 21.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Mon. 22.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Tu. 23.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Wed. 24.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
San Francisco.	Thurs. 18.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Fri. 19.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Sat. 20.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Sun. 21.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Mon. 22.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Tu. 23.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy
	Wed. 24.	30.10 54.79	30.10	54.79	30.10	54.79	14	Fresh	14	14	Cloudy

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., April 25.

FLOUR—We note an active local demand with a fair inquiry for export. Sales reported embrace 7,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 5,000 Oregon extra. We quote prices as follows:

Superfine, \$4.50@5.12½; extra, in sacks, of 196 lbs. \$5.25@6.12½.

WHEAT—The market has been firm with good demand since our last review. Sales aggregate 20,000 sacks fair to choice at \$1.75@2.00 per 100 lbs. Quotable at close at \$1.70@2.00 per 100 lbs.

The latest Liverpool market quotation comes through at 11s. 10d. @12s. 3d. per cental.

BARLEY—Market quiet. Sales embrace 10,000 sacks ordinary coast to choice bay, at \$1.40@1.60, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.55@1.85 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.55@1.65 for yellow and white per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.30@2.50 per 100 lbs.

RYE—According to quality is quotable at \$2.20@2.25 per 100 lbs.

STRAW—Quotable at \$8.50@9.00 per ton by the cargo.

BRAN—Has declined to \$16 per ton from the mill.

MIDDLINGS—For feed, have come down to \$22.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been fair, and prices at close are \$14.00@22.00 for fair to choice per ton.

HONEY—Is selling at 15@16c in the comb and 10@12½c strained.

POTATOES—The market is a little better. Sales of Humboldt at 75@90c; fair Petaluma, 10c.

HOPS—The range is 50@65c.

HIDES—During past week 2,320 Cal. dry sold at 19@20½, and 1,630 salted at 8½@9½c.

WOOL—The market has been quiet this week but receipts are rapidly increasing. Sales for the week amount to about 150,000 lbs.

One lot of choice clean sold for 47½c. Buyers and sellers are still struggling about rates, there being a difference of 4 or 5 cents in their views. Range between 40@50c. The Eastern markets at last dates were dull.

TALLOW—Market steady at 8½@9½c per lb.

SEEDS—Flax 3c.; Canary, 5@7c., Alfalfa, 16@20c; Mustard, 3@6c. for the different kinds.

PROVISIONS—California Bacon 13@14½c; Oregon, 13½@14½; Eastern do. 12@12½c for clear and 14½@15c for sugar-cured Breakfast; Cal. Hams 14½@15c; California Sugar-cured Hams, 16c; Eastern do. 15@16c; California Smoked Beef, 13½@14c, per lb.

BEANS—Market continues fair. The follow-

ing are jobbing rates: Pea \$3.25@3.50; small White \$3.00@3.25; Small Butter \$2.75@3.00, large \$3.00@3.25; Bayo, \$3.50@3.75; Navy \$3.50 per 100 lbs.

ONIONS—Fair to choice, \$7.00@8.00 per 100 lbs. The season is about over.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Hickory, 12c; Brazil, 15c; Chili Walnuts, 15c.; Italian Chestnuts 30@35c.; Eastern Chestnuts, 15@25c.; French Almonds, 22@25c.; Princess Almonds, 35@40c.; Cocoanuts, \$8.00@10.00 per 100.

FRESH MEAT—Market shows a decline since last report. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 12@13½c per lb. do. 2d quality 9@11c per lb.; do. 3d do. 6@8c.

VEAL—Quotable at 8@11c.

MUTTON—6½@7c. per lb.

LAMB—Easier at 11@12½c.

PORK—Undressed grain-fed is quotable at 7½@8c, dressed, grain-fed, 10@10½c. per lb.

POULTRY—Live Turkeys, 23@25c. per lb.; dressed, 25 per lb.; large Hens \$9.00@10.00.

Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$7.00@10.00; Ducks, tame, \$10.50 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50.

English Snipe, \$2.00@2.50; Small Ducks, \$1.50@2.00; Wild Geese, \$3.00@4.00 per doz.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in fair supply; it may be quoted at 20@25c; New firkin is quotable at 22@25c; old is dull at 12½@20c.

CHEESE—California, 15@17c. Eastern, none in market.

Eggs—California fresh, 35@36c. per doz. Oregon 30@32½c; Ducks, 30@32½c.

LARD—California 12½@13½c; Oregon in bbls. and kegs 12@12½c; Eastern in cases 14@14½c; do in tes. 11½@12c. per lb.

FRUIT.

Tah. Oranges, 15 00@18 00 Bananas, bunch 2 00@3 00

California do. 10 00@35 00 Apples, eating, bx 2 00@2 10

Limes, per M. 20 00@25 00 do cooking, bx 1 25@1 75

Ant. Lemons, M. — Pineapples, — 11@12½

Sally do. M. 20 00@35 00 Strawberries, lb 11@12½

Cal. do. M. 20 00@35 00 Gooseberries, lb 15c

DRIED FRUIT.

Apples, per lb. 6½@8c Plut. do. per lb. 20@22

Pears, per lb. 7@9 Black Figs, per lb. 5@15

Peaches, per lb. 7@9 White, do. 15@20

Apricots, per lb. 9@10

Plums, per lb. 5@6

VEGETABLES.

Cabbage, per lb. 3½@4½c Marf. Squash, ton 3½@5

Garlic, per lb. 1½@2½c Asparagus, per lb. 3½@5

Rhubarb, per lb. 5@7c New Potatoes, per lb. 2½@3

Green Peas, per lb. 5@6c Tomatoes, per lb. 2½@3

Cucumbers, per lb. 1½@2½c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is firm for all descriptions. Burlap sacks 17½c; Flour sacks 10½@10¾c. for qrs. and 16¾@17½c. for hls. Standard Gunnies are nominal at 20@21c.; Wool 75@80c.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been quiet, and a very light demand for export. Trade has been somewhat disturbed by the Stevedores strike. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surface, \$25; Spruce \$17@18; Redwood \$16; refuse \$12; dressed do. \$30; refuse do. \$20. We quote Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$42.50@45; Cedar \$50@55. Pickets: Rough, \$14; pointed, \$16; round, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange:

Puget Sound Pine—

Rough, per M. \$20 00

Fencing and Stepping, per M. 32 50

Fencing, second quality, per M. 25 00

Laths, per M. 3 00

Fencing, per lineal foot. ¾c

Redwood—

Rough, per M. 20 00

Rough refuse, per M. 15 00

Rough Pickets, pointed, per M. 18 00

Rough Pickets, per M. 10 00

Fancy Pickets, per M. 30 00

Siding, per M. 25 00

Tongued and Grooved, surfaced, per M. 35 00

Half-inch surfaced, per M. 35 00

Rustic, per M. 37 00

Batten, per lineal foot. ¾c

Shingles, per M. 3 00

Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$80 per M.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manilla, 19½c; Rio 19½@20; Ground Coffee in cases 30c.; Chicory, 12½c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Maco \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c@5½c. Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, \$10.50@11; in kits No. 1 \$2.50@2.75; do No. 2 \$2.00@2.25. Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$6.25@9.00 for assorted sizes.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Golden C. 10½@11c; Hawaiian 7½c. as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@14;

Carmen Island, in bulk, \$14@15; Fine Liver-pool, \$23.50 per ton; Coarse, \$18@19.

SOAP—The prices for local brands are 5@10c, and Castile, 13½@14c per lb.

TEA—We quote Young Hyson at 85c@1.15; Gunpowder, 95@1.50; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c \$1.00; English Breakfast Congou, 50@85c.; Basket 60@70c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, April 25, 1872.

MISCELLANEOUS.

Butter, Cal. fr. 25 @ 32

do Oregon, 25 @ 30

Honey, per lb. 25 @ 30

Cheese, per doz. 20 @ 25

Eggs, per doz. 40 @ 45

Lard, per lb. 18 @ 20

Sugar, per lb. 10 @ 12

Brown, do. 9 @ 10

Beet, do. 12 @ 15

Sugar, Map. 25 @ 30

Pump, dried, 15 @ 20

Pump, fresh, 10 @ 15

Wool Sacks, new 20 @ 25

Second-hand do 15 @ 20

Wheat, sack, 22 @ 25

Flour, ex. 10 @ 15

Superfine, do. 6 @ 10

Corn Meal 10 @ 15

Wheat, per 100 lbs. 20 @ 25

Oats, per 100 lbs. 10 @ 15

Pine Apples, 1.50 @ 2.00

Bananas, bunch 50 @ 60

Cal. Walnuts, 50 @ 60

Cranberries, 15 @ 20

Strawberries, 15 @ 20

Pears, table, 10 @ 15

Plums, Cherry, 6 @ 8

Oranges, per 100 lbs. 20 @ 25

Lemons, per 100 lbs. 20 @ 25

Limes, per 100 lbs. 20 @ 25

Figs, dried, 10 @ 15

Asparagus, w. b. 12 @ 15

Artichokes, doz. 75 @ 80

Brussels sprouts, 10 @ 12

CHURNS! CHURNS!

BOX CHURNS,

Cylinder Churns,

Thermometer Churns,

THE "BLANCHARD CHURN,"

Dasher Churns,

Douthett's Patent Dash Churns,

HARDWOOD CHURNS,

Butter Workers, Etc.,

MANUFACTURED AND FOR SALE BY

E. K. HOWES & CO.,

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We are the ONLY manufacturers of this line of goods on this coast; and having put our prices at MUCH LOWER figures than the same goods have ever been offered at before in this market, we solicit the custom of all who desire

A Good Home-Made Churn.

Send for a catalogue, and see for yourself. All orders promptly filled, and satisfaction guaranteed in all cases. 17v3-cow3t

From ALL SIZES 3 to 30 **Hooley's** Horse Power. **PORTABLE Engines** Sole Agents **TREADWELL & CO**

"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 cowbp

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

As a Family or Light Manufacturing Machine it has no superior—uses a straight needle and shuttle, and makes the Lock Stitch (alike on both sides). Send for a circular. Agents wanted in every town.

E. W. HAINES, General Agent,

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SAN FRANCISCO.

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Young and Middle-aged Men and Boys may enter on any week day, and in addition to all the advantages to be enjoyed at any other Business College, have access to the General Lectures and Literary Exercises of the University. Our Diploma is received as conclusive evidence of proficiency by the Bankers, Merchants and business men. 11v3-tf

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CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.

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HELY & JEWELL, Agents.

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento. G. R. JEWELL, T. B. FLINT.

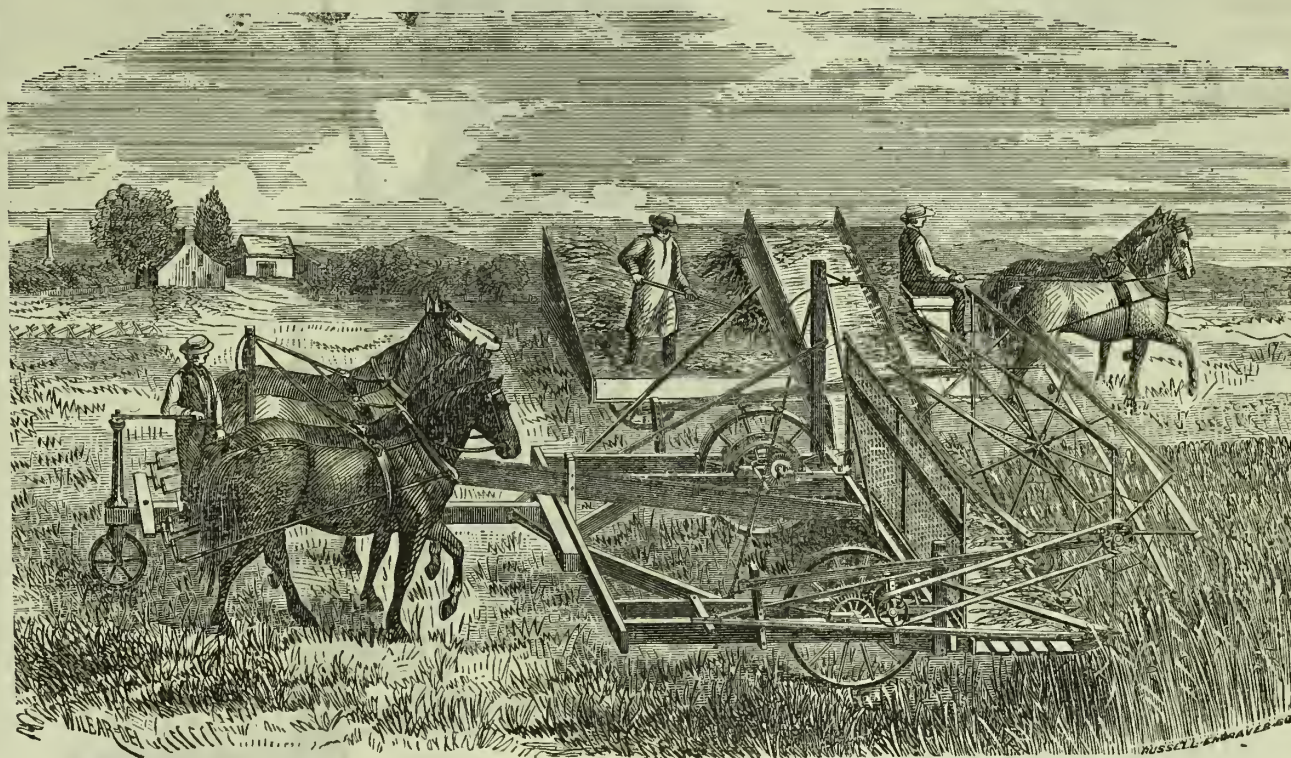
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TREADWELL & CO.,

WITH THE OLD STANDARD

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Hoadley's Portable Threshing Engines,



Russell's Threshers, Haines' Headers, Wood's Prize Mowers

Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

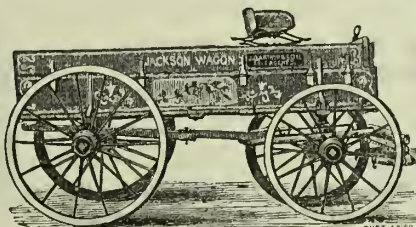
These Machines MUST BE SOLD, and the supply being limited, and prices at FIRST COST, they will be disposed of at an EARLY RATE. Farmers who intend to buy Harvesting Machines for this season, would do well to ORDER NOW, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. DON'T FAIL TO GET OUR PRICES BEFORE ORDERING.

TREADWELL & CO.,

OLD FARMERS' MACHINERY DEPOT, SAN FRANCISCO.

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JACKSON MICHIGAN WAGONS are known to be the best FARM and TEAM WAGONS sold on the PACIFIC COAST. Send for Certificates. Tho

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others. Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only; or fitted up with California Racks and Brakes, Spring Seat, etc., or with Eastern double side-box bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices. N. B.—WARRANTED FOR THREE YEARS.

J. D. ARTHUR & SON.,

Corner California and Davis streets, SAN FRANCISCO.

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Three Thousand Pounds GIANT RED MANGEL WURZEL BEET, Imported Seed, pure and Genuine, producing specimens over a hundred weight each. Also, a few tons of that CHOICE ALFALFA left. RAMIE Plants and Seed. CALIFORNIA TREE SEEDS, some new and rare sorts. AUSTRALIAN BLUE GUM Tree Seed. FINE GRASS SEEDS for Lawns. CHOICE CANARY SEED. Seeds of all kinds, rare Plants and Bulbs, Fruit Trees, etc., at the OLD STAND.

E. E. MOORE,

425 Washington street, San Francisco.

New Catalogue of Flowers, Bulbs and Plants now ready. 17v3-2t

1857.

SEEDS.

1872.

15 Years Established.

W. R. STRONG,

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Flower,

Field,

Fruit,

Tree and Shrub,

Grass and Clover Seeds,

Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

My annual catalogue is ready and will be forwarded on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

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DEALER IN

All Kinds of Grain and Produce.



Has on hand large stocks of Wheat, Barley, Oats, Corn, Bran, Flour, Middlings, Potatoes, etc.

SEED GRAINS, of all kinds, a specialty. WHEAT—Choice Seed—Bay Coast, Australian, Chill, Sonora, and other varieties. BARLEY—Coast and Bay, for Feed and Seed.

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as IMPROVED is the perfection of the Threshing Machine. We have them from 30 to 40 inch, with NEW FEED TABLE, LARGE SHOE, DOUBLE FAN, ELEVATOR, DOUBLE DISCHARGE, etc., made especially for the wants of California, after years of study. It has greater cleaning capacity than any other, and is EVERY WAY PERFECT. No other machine has ever equalled "The Russell;" none can excel it.

Treadwell & Co.

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With neither Engine, Piston, or Plunger.

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GANG PLOW.

Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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ROSE'S PATENT
ADJUSTABLE PLOW FOR VINEYARDS.

It is the BEST and MOST COMPLETE PLOW for Horticultural use ever invented.

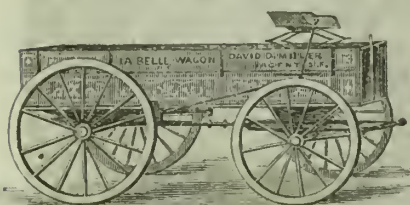
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See communication of "J. D. B." in RURAL PRESS of March 20, 1872. Send for circular and prices to

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THE CELEBRATED ZUFELT & CO.,
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CELEBRATED LA BELLE WAGON,

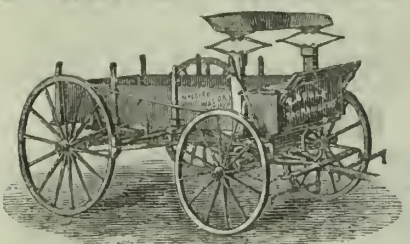
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All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate. Sold at from \$90 to \$125. Can be had only at

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Also on hand all kinds of Imported Wagons from the Eastern States, including Thorough-brace or Mountain Wagons, C Spring and Side Spring Buggies—in fact all kinds for the city and interior trade. Country orders promptly filled and warranted to give satisfaction, and at as low rates as though present in person. 7v3-1f



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skeln at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

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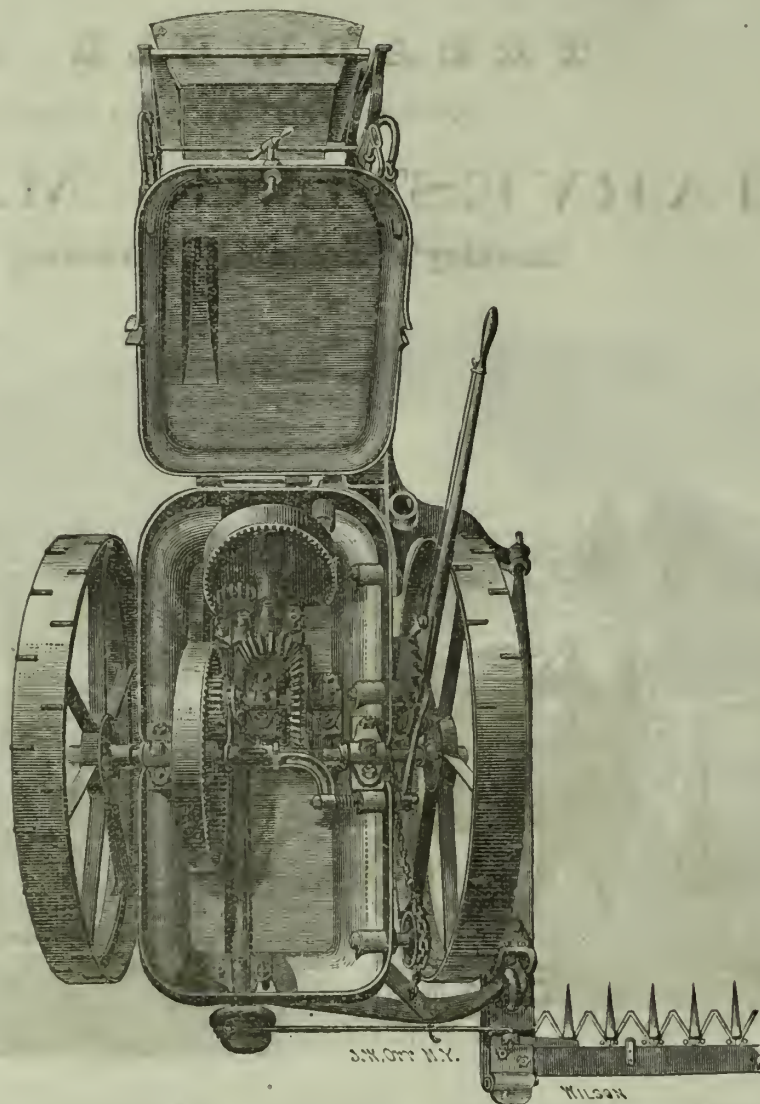
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The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STANCHNESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains. ITS GEARING IS SHAPED TO STANDARD GAUGE, and EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water, Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAFT and the same DURABILITY which pertains to CUT GEAR in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

"There is no other Harvester."

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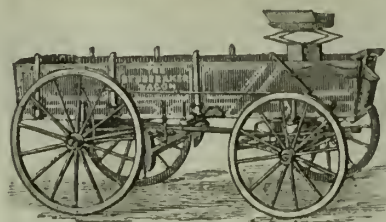
Also, a full stock of PLOWS, HARNESS, CULTIVATORS, and all kinds of HARVESTING IMPLEMENTS.
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10 and 12 Pine Street and 108 and 110 Front Street, San Francisco.

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The Standard Wagons of the Pacific Coast.

FOR QUALITY,

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AND EXCELLENT STYLE,

They Have no Peer.

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Having established a MANUFACTORY to build WAGONS, BEES, HAARERS and SEATS, I am better prepared than ever to furnish

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16v3-3m

E. E. AMES, General Agent.

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These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock. 16v3-6m

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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

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Trees and Shrubs, including the rarest of Conifers,
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Choice Roses and Pot Plants
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of Australia, Europe, China and Japan; in fact, we aim
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12v3-3m

30,000

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Of various varieties, including BLUE GUM, RED
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For Sale at the
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filled.

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Has constant
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and Flower Seeds of all kinds, are for sale by

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a large assort-
ROSES too num-
ment on
Plants, Flow-
Garden, Grass

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BLAKE'S PATENT STEAM PUMPS.
WHAT IS SAID BY THOSE WHO USE THEM.

SALEM, Oregon, January 16th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump, our company purchased of you, we would say in all sincerity that the pump has exceeded our expectation. It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is SIMPLE, DURABLE, and PERFECT in its construction. We have found it entirely satisfactory and just the pump in every respect needed for our work.

Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

PHOENIX MINE, Napa County, January 10th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: The No. 8, Blake Steam Pump we bought of you last fall is doing good service. We are having a large amount of water to contend with during this stormy weather; but the pump throws it all out of the main shaft (160 feet deep) with perfect ease, and is only working from 60 to 80 strokes a minute. It is a complete pump and no mistake. We are well satisfied with its working, and if you wish to use the name of our company, as a reference, you are at liberty to do so. Very resp'tly, GEO. FELLOWS, Supt. Phoenix Quicksilver M. Co.

OFFICE STARR MILLS, VALLEJO, Cal., January 13th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: We are pleased to state that the No. 3 Blake Pump purchased of you, has constantly supplied our three boilers for the past year, with water heat to above boiling point with one of Armstrong's Patent Heaters. It has given us no trouble nor expense, and has in fact fully come up to your recommendations.

Yours, etc., STARR BROS. & CAMPBELL.

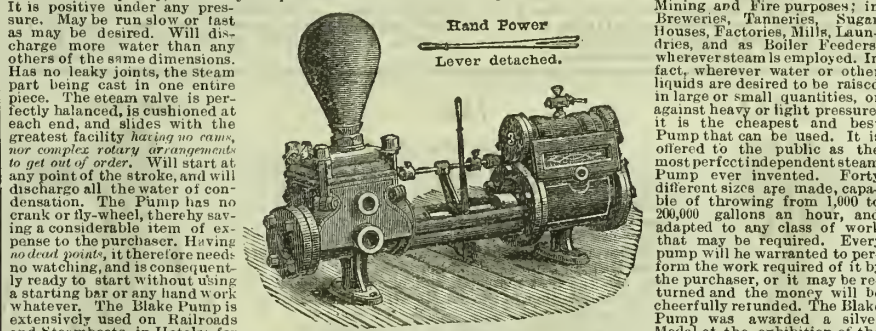
OFFICE S. J. WOOLEN CO., SAN JOSE, January 29th, 1872.
MESSRS. BERRY & PLACE, San Francisco—Gentlemen: We have used a No. 6 Blake Steam Pump now for about two years, both as a Tank Pump and as a Fire Pump in case of need; and it has given excellent satisfaction. It suits us in every respect.

Very respectfully,
R. F. PECKHAM, Pres't San Jose Woolen Co.

BELMONT, Cal., February 6th, 1872.
MESSRS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of Berry & Place, by Mr. Ralston, I will say, that it gives ENTIRE satisfaction, even working as it now is, where no other Pump could; for it is at present set under water, yet it does its work PERFECTLY.

Yours, etc., J. E. BUTLER, Supt. Water Works and Engineer at W. C. Ralston's.

BLAKE'S PATENT STEAM PUMP.



These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for nearly three years, and we are willing every one in use may be referred to; every Pump will speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows: It is positive under any pressure. May be run slow or fast as may be desired. Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility having no cams, nor complex rotary arrangements to get out of order. Will start at any point of the stroke, and will discharge all the water of condensation. The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having no dead points, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand work whatever. The Blake Pump is extensively used on Railroads and Steamboats, in Hotels; for Mechanics' Institute, San Francisco, and State Fair at Sacramento, as being the best Steam Pump on exhibition. The agents have recently imported several of the largest-sized Mining Pumps for water works, and deep mines, and will be pleased to refer parties to them: we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by TREADWELL & CO., Machinery Depot, old stand, corner of Market and Front streets, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.

Hand Power
Lever detached.

It has no Cams or Rotary Complex Valves. It has stood the test wherever tested.
IT IS SIMPLE, COMPACT, DURABLE, AND POWERFUL.

Manufactured by Geo. F. Blake & Co., Boston, who build and have on hand a larger variety of Steam Pumps than any other concern in the country, embracing forty different sizes, and capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to every description of work required. Send for circular and prices.

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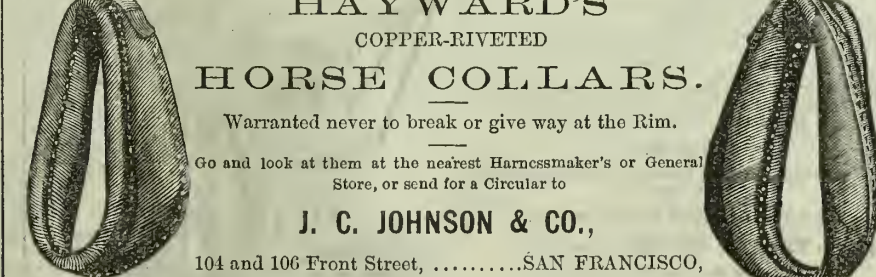
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6v24-cowbp

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

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CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD."

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COPPER-RIVETED
HORSE COLLARS.



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4v23-ly

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Also five hundred Calves of the best milk stock in the State, from 3 to 6 months old in June, from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats.
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12v3-3m



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Relieve the Draft of the Team,
Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

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As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

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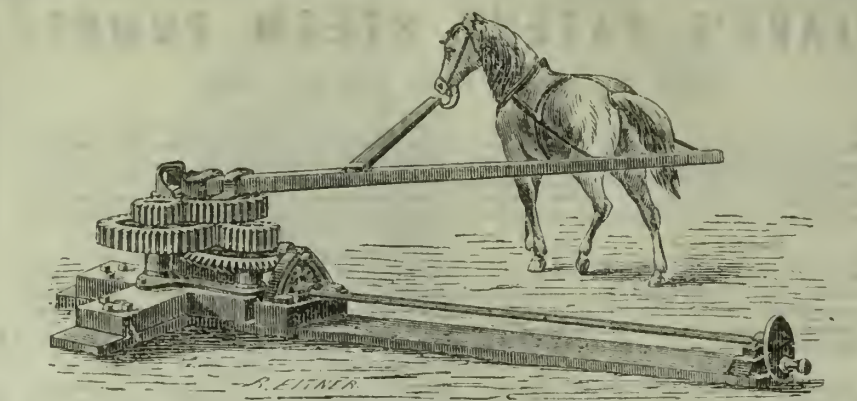
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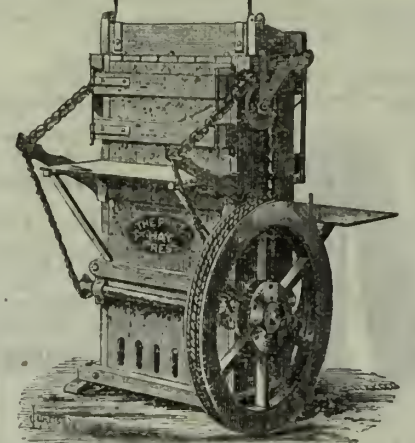
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PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, MAY 4, 1872.

[Number 18.]

The Wild Pigeon of California. (*Estopistes Migratoria*.)

The wild pigeon of the Pacific coast differs from its prototype, the passenger pigeon of the Atlantic States, only in being a larger bird, with a darker plumage. It is equally migratory in its habits, but never seen collectively in such large numbers as characterize the assemblages and migrations of the passenger pigeon in other parts of the world. A few hundreds at most, being as many as are ever seen together for any length of time in one place.

They are found in the foothills and lower mountains of the Sierra Nevada and Coast Range, principally in Autumn, at the season of the ripening of the madrone berries. Their food consisting of berries, the seeds of weeds and grasses, and grains. The California pigeon is remarkable for its symmetry of form, the extreme rapidity and elegance of its flight. It propels itself by quickly repeated flappings of the wings, bringing these at times closely to the body with firm strokes, and, before alighting, breaks the force of its flight by several rapid beats, as though fearing injury from coming too suddenly into contact with the object upon which it may desire to rest.

The male of this species has the throat, breast and sides brownish red; sometimes with a purplish tint, under parts of the body pale slate color or bluish white. Head blue; hind part and sides of neck changing to gold, green and bright crimson. Upper part of body blue; wing coverts marked with black spots; quills dark slate, almost black; tail feathers dark brown and blue. The female has a similar distribution of colors, but very much duller than the male.

The eastern pigeon, though not possessing the strength, size or weight of the California bird, is nevertheless capable of moving through the air at the rate of a mile a minute; and it has been killed in New York with its crop yet filled with rice collected from the fields of Georgia or South Carolina, which it must have left only five or six hours before. We say *only*, because as they digest their food rapidly, they

must necessarily have travelled the distance within the time allowed, in order to have arrived with the rice still in its perfect, unsoftened state.

The shape of their body is oval, with a sharp pointed tail, admirably constructed for rapid evolutions, and also furnished with a pair of long wings, moved with large and powerful muscles. The rapidity with which this bird will pass through a wood is perfectly astonishing, threading its way among the closely-grown branches with unerring course, it flashes upon

form and pure white. The pigeon never nests at any great distance from water, to which it resorts several times during the day, and when it drinks immerses its bill up to the eyes, and remains until its thirst is satisfied.

Our Fruit Trees.

There seems to be considerable complaint in portions of the State that the peach, apricot, nectarine, and other tender fruit trees are dying. The trees on the low river bottoms, and on

dead and decayed, the surface feeders alone keeping the trees alive. These facts are suggestive, and we are glad our farmers' clubs are investigating them.

The Wool Prospect.

We mean to keep the readers of the *RURAL* posted, just as near as we can, in regard to the condition of the wool market, as we find it in San Francisco, and also the changes, if any, in the price in the great wool marts of the world.

We wish our wool growers to rely on what we say, and then act on their own judgment as regards selling or holding on for higher prices.

First, then, we would state that there are upwards of ten thousand sacks of wool in store in San Francisco, at the present time, and more constantly coming. That for much of this wool buyers have paid, or agreed to pay, forty cents per pound, and upward to fifty cents. And yet we make this statement, that P. Saxe, a prominent wool buyer in this State, buying for H. Rankin & Co., Troy, N. Y., bought of Flint & Bixby, of the San Justo Ranch, three miles from San Juan, the finest Merino clip in the State, to the amount of 11,500 pounds, at forty cents per pound.

We further state that this lot of wool was offered for sale in San Francisco before being shipped East, for forty-

five cents, but found no taker at that price. That it was shipped to Troy, N. Y., where on arrival it was worth but 35 cents, or 5 cents less than was paid for it in California, to say nothing of cost of shipment.

At the great London sale of wools just closed, at which one hundred million pounds were sold, a feature of the same was substantially this:—that the sales for the last week commenced with a falling off, of one penny, equal to two cents per pound, and closed at four pennies, or 8 cents per pound off, from the previous week's prices.

HANDLE rough-sided men carefully. It pays to take a little time when opening chestnut-burrs.



THE WILD PIGEON OF CALIFORNIA.—ESTOPISTES MIGRATORIA.

the sight like a meteor, and is gone from our gaze.

The flesh of the California pigeon is dark, but its juices are rich, and by many is much liked. The young, or squabs, as they are termed, are very tender and delicate, and much more esteemed as food than the adult birds. They generally select the tallest trees they can find to breed in, and as many as a hundred nests are often seen on a single tree. The conduct of the male at this time is much like that of the domestic pigeon, elevating and depressing the body, swelling out the throat, and expanding the tail, he moves around the timorous female, uttering the soft coo-coo-coo, so familiar to everybody who has ever been near a dove-cote. They lay only two eggs, elliptical in

land with a hard pan not far below the surface, seem to suffer the most, and these circumstances point to the very wet season just past as the cause of the trouble. The several farmers' clubs throughout the State are investigating the subject, and we may look for valuable reports as to the extent and cause of the calamity.

We have noticed that the peach trees are troubled more with the curled leaf, this spring, than for years before, and would suggest that this subject be examined and reported on, also, in the same connection. It will probably be found that the causes which produce death also produce the curled leaf. We have been told that in some localities, especially on low wet ground, it has been observed that the tap roots of apple trees are also found to be completely

CORRESPONDENCE.

From the Smoky City.

[Written for the Press.]

EDITORS PRESS:—If there is one thing more than another which will bring conviction to the mind of a Californian that the Pacific slope has the finest and best climate under the sun, so far, at least, as we Americans are concerned, it is for him to take a trip overland in mid-winter. And if he does not soon find evidence more convincing than "proof from Holy Writ," then I am mistaken. There are a class of chronic grumblers in California who are continually finding fault with this, that and the other, but I believe they could be easily cured by causing them to pass a winter away from the Pacific slope in some of the Eastern or Western States, and methinks I would hear them say: "California, with all thy faults I love thee still."

Since my arrival, numerous persons have made inquiries regarding California, her mines, productive soil and wonderful climate—where vegetables can be raised all the year round—which last, I have no doubt, is received with many grains of allowance by those who have passed a greater portion of their lives in a Northern climate, and who think there are none better.

Pittsburgh.

Who has not heard of the Smoky City with her wonderful manufactories, rich deposits of bituminous coal, or as they are termed here, Black Diamonds, her glass manufactories, which furnish most of the glass used in the United States; her rolling mills, whose products can be found in almost any portion of this continent. Her foundries of brass and iron are known far and near; for here were made, during the Rebellion, the famous Rodman guns, which performed such good service in the cause of the Union. Here, also, are located some extensive plow factories which supply the Western and Southern States; and on many a Western farm, and Southern plantation can be seen specimens of Pittsburgh manufacture. In fact, there is scarcely any article of iron or glass which has not a representative factory here.

Pittsburgh, geographically considered, is well located, at the confluence of the Monongahela and Alleghany rivers, and in the course of time must attain to a high position as a commercial city, owing to the advantages which she possesses as a distributing point. But the great secret of her prosperity lies in the enormous coal fields adjacent to the city; and some authorities tell us that the city overlays a bed of coal, fourteen feet thick, but which will not be worked for many years, as the coal beds in the hills can be worked with greater profit. Each new railroad which is put in operation brings to light new discoveries of coal. The Pittsburgh, Virginia and Charleston Railroad, which has just been graded, is reported to have discovered magnificent veins of coal of a better quality than any now in use in this city.

Of late years, considerable attention has been paid to the cultivation of the grape in this region, but it does not meet with the success that attends the business on the Pacific slope; in fact, I do not think the climate adapted to vinicultural pursuits; the season is too short, and as soon as the frost appears the grapes are withered. Concord and Catawba varieties prove to be the best raised here.

A New Enterprise.

Last summer, an experiment was made in smelting some of the rich silver ores of the Cresson mine, in Utah, by some enterprising gentlemen of this city, and the result has exceeded their most sanguine expectations. So well were they pleased with the result that it is now their intention to erect an extensive smelting works, for the purpose of reducing the rebellious ores of that region. If this enterprise is successful, no doubt we shall soon see Pittsburgh become the Swansea of the United States—as they have every facility here for the prosecution of the business.

Consolidation.

This city has lately consolidated with

the towns contiguous, a subject that has been agitated and discussed for many years. It finally has been accomplished, and now the Smoky City boasts of 120,000 inhabitants, placing her the eleventh in the rank of cities, according to population.

Prospects.

At no time in the history of Pittsburgh were prospects more flattering than at present. Work is plenty, and men are daily called for through the advertising columns of the papers. Some of the manufactories are making extensive additions to their works, in order to keep pace with the orders which come to hand. Railroads are being constructed to new coal fields, to furnish the requisite fuel, and buildings in course of erection can be seen in almost all directions.

W. E. D.

Pittsburgh, April 3, 1872.

Artichokes and the Carob Tree.

EDS. PRESS:—A correspondent of your valuable paper some time since confounded the qualities of two very different plants; the *Olianthus Tuberosum*, commonly called the Jerusalem Artichoke, and the real artichoke, or *Cynara Scolymus*. The Jerusalem Artichoke is a somewhat potato-shaped root, native of South America. It is produced by a kind of sunflower, smaller than the common species, which has this tuberous root. They are extremely productive, a single acre, it is said, has produced ten tons. They are good for all sorts of stock; but require to be ground in a mill when given to horses. This is the species the cultivation of which the French Academy recommended on account of the disease in potatoes.

The tubers can be cooked for the table, but are an inferior vegetable for such purpose, though somewhat resembling the taste of the bottom of the real artichoke, from whence I suppose its common name. They make nice pickles or can be eaten raw for salad—like cucumbers.

The garden artichoke, or *Cynara Scolymus*, is a low-spreading plant, producing large, fleshy green flowers, of which the parts eaten are the lower part of the leaves of the flower when it is boiled. The leaves are first pulled out and the bottom ends dipped in a sauce made of butter and lemon juice or vinegar, and then the centre or choke being cleaned off, the bottoms are also eaten. The bottoms are sometimes used in an elegant French dish called the nests of quails. The heads, wings and tails of the birds are preserved and fastened on the cooked birds, and each bird is placed in a cooked artichoke bottom with a brown sauce surrounding them.

The flowers will coagulate milk like rennet, and the stocks contain a bitter juice which, mixed with white wine, is said to cure dropsy. The juice prepared with bismuth, gives a permanent gold color to wool.

The Carob Tree

Might be made a very valuable acquisition for California. It is the fruit of this tree that is referred to in the parable of the Prodigal Son. The "husks" were the "pods" of this tree, which contain a small quantity of sweet substance, something like the honey locust. It is also sometimes called "St. John's Bread." The Carob tree is of a good size, and when the pods become heavy with sweetness they weigh down the branches on every side so that they have to be harvested to prevent injury to the tree. This tree would be very valuable in this country as, after it is once started it requires no irrigation, and would suffice to feed stock and hogs in dry seasons. Moreover, the more trees we can grow without rain, the more rain we shall be likely to have.

The Patent Office recently distributed some Carob Seed, but whether they have trees or seed to distribute now, I know not.

C. E. H.

San Gabriel Mission, March 25.

EARTHQUAKES UNDERGROUND.—It is worthy of note that, although the miners at work underground at Cerro Gordo during the recent severe earthquakes, did not feel the shocks, that a late earthquake in Germany is said to have been felt with great force underground, and the miners hurried out with all possible haste.

HOME AND FARM.

Farm House Chat.

[Written for the Press by MARY MOUNTAIN.]

Quiet women who have few opportunities of putting their ideas into words—who must simply "stay at home and work"—will not be expected to say anything new, profound or brilliant upon a subject that agitates the world and engages *pro* and *con* the most eloquent tongues and pens. I have not the gift of argument; and when I hear the epithet "slave" applied to American women, I have never at hand the clear-cutting logic wherewith to demolish the mischievous falsehood, but I prickles all over with silent anger.

Yet once I found voice for remonstrance, though it nearly choked me.

Happening at the Benjamin Franklin Hotel to sit next an advanced woman of the period, I was so unfortunate as to receive the full flow of her glib and noisy eloquence as she rattled at an astonishing pace through all her stock phrases of "poor, degraded, down-trodden, enslaved woman," etc., with lamentations loud and long that the negro had "come in" a little ahead of us, but if we would only "assert" and "pluck up" and "maintain" we need not much longer be slaves, etc., etc., endlessly. Quite sure that as a stranger I might be judged of kindred spirit with this remarkable woman, I lost my appetite instantly and pricking with confusion and dismay, I felt, rather than saw, the quizzical eyes and smiles that bore down upon us from all parts of the room.

Suddenly the voice seemed louder—filled all space—for there was no more rattle of knives and forks. Looking up—behold! the long line of boarders who had been briskly refreshing the inner man had all vanished—had "folded their napkins like Arabs, and silently stolen away."

The waiter coming in with relay of puddings took in the situation at a glance, sniffed the hostile air and retreated in good order. Talk about Americans bolting their dinners! Here was a clear case of it, and a woeful waste of corn starch puddings! One woman was left sitting opposite and she clapped her hands in gentle applause of this triumph of eloquence over appetite as she softly cried, "victory! victory!" "Yes, victory!" chimed the fair lecturer as she led the way parlorward—"did you see how they all sneaked away? Not a man of them can answer me, or say why we have not as good right to vote as the negro!"

Hardly knowing what I did, I gripped her arm hard as I prayed "For mercy's sake leave the negro out! Can't you see he does not help your cause? If it be woman's right, or painful duty to take up political affairs in order to save the country or herself, why, let her cause rest on that noble foundation of right and duty. Whatever is ardently believed and fought upon that ground is very likely to win," etc.

Probably the remonstrance was useless. She had her lesson pat—loved to talk—and was very unlikely to take the trouble involved in change of base.

After this I met in her own home another lecturer—so womanly, so wifely, so motherly;—with a winning strength of mind, a plain, practical wisdom for all topics and emergencies. Here was compensation; and a chance to balance accounts by believing that the harm done by the former, may be offset by the good influence of the latter.

As for the charge of "slavery," it has its absurdly false side and its sadly true one.

Queen Victoria—whose "prond pre-eminence" is so often quoted by the reformers—is quite as much a slave as we are; quite as much in bondage to certain laws; and when in the full blaze of bravery of royalty delivering her harmless little speech to the assembled Parliament, she may be heavy at heart because the real sovereign power is a thing of the past—she cannot stamp her foot and order these men to grant more liberal annuities to each of her expensive sons and daughters. Then she is hampered or "enslaved" by a thousand tiresome exactions that we know nothing about. Having dared the past few years to put her private grief as a shield between herself and useless ceremonial burdens, she has so seriously endangered her popularity that prime ministers were obliged to interfere and remind the wilful woman that she is in a certain sense the servant (slave!) of the public.

And so we all, men and women, are in a tangle of public and private obligations. Necessary evil of civilization. Progress—

ive spirits would almost prefer barbarism and a free-and-easy tomahawk—but here we are. Most of us don't mind the harness that keeps us in line with decent society and makes us pull for the general interest of community. That tackle does not gall for we have grown up in it. But we forge our own special chains, and punish ourselves finely by fretting and chafing against their strength.

Temperament, habit, prejudice, social ambition, political aspiration; from all these we get strong material and bind ourselves accordingly.

And when these get matrimonially mixed then comes indeed the question of rights, tangible and intangible; rights that can be talked, scolded, and laughed about; other rights still more precious perhaps—but one can as easily demonstrate the size, shape and complexion of the human soul as to show and prove some of its inherent rights.

Except in rare instances of combined intelligence and affection, the *strongest character*—be it masculine or feminine—will take the "rights" and the other will lose in proportion. The weaker party will secretly rebel—will often hate the ruling power—but the status remains the same; and regardless of sex, my sympathies are with the weaker party. If I see the strong wife go forth triumphant to manage the business affairs of the firm, I give a pitiful thought to the subdued husband at home, meekly blinking under the shelter of a wilted hat.

Not often, however, is pity called out in that direction. Owing to some inscrutable law of nature, the wife is usually the weaker party, and the exceptions may still go to prove that temperament and strength of will decide these personal battles, and will do so spite of all the combined masculine and feminine legal skill that may be brought to bear upon these delicate affairs.

Laws need amending—that is certain; and some of us may live to see all these property matters fairly arranged and woman's equal share fairly acknowledged; but those who venture (in person) to maintain the sacredness of old-fashioned marriage, will have the same old-fashioned fight to make and the strongest nature will win as usual. Probably most women who wish for the ballot expect too much from it.

Let them rest assured that their glorious ideal future will still find women in all sorts of slavery; slaves of neatness and order; slaves of sloth and ignorance; slaves to their children—to their husbands; slaves of Mrs. Grundy or some other fanciful embodiment of public opinion; and what countless multitudes will still be willing, devoted slaves of fashion!

When nature storms and raves there results a mixture of mischiefs and blessings; and about the same hap-hazard happening may be expected from the present social agitation.

I met an educated and accomplished lady; and amid some talk of the perplexities that beset young mothers, she said:

"Perhaps you know that I lost all my children, and they were murdered? Yes, it is true! My ignorance did it! If I could have known what I now know they need not have died; and my own health need not have been so broken that I am almost more dead than alive."

Ah, many a lonely mother-heart cries out in anguish—"O, if I had known! If I had only known!" Can we call ourselves educated while ignorance still makes havoc of life, health and happiness? Where can sons and daughter be taught to avoid the errors that have wrecked our lives?

Political influence may be a good thing for a woman to have; but the mothers who patiently teach their children justice, mercy and the golden rule; who impress upon their minds the value of health, temperance in all things, and the prond independence that industry gives; these are the women that will save the country.

And let my "sister farmers" remember that a great part of this national business is in their hands. Farm-children are directly under parental influence—no street fascinations to mar the good work.

We all hear the proud claim of Horace Greeley and others, that the "majority of our great men are built up from farm-boys." The "coming woman" is almost sure to be a farm-girl, for the quiet, still life gives the best chance for sound health and the growth of a large, thoughtful, vigorous brain.

Stopping to consider what we would claim for this "coming woman"—here we are without any more fuss exactly upon our special line of "rights," out among the farm-houses. So next "chat" is all marked out.

MECHANICAL PROGRESS.

REMARKABLE TESTING MACHINE.—The *Engineer*, in an article on the strength of materials, speaks of the wonderful testing machine of Mr. Kirkaldy, in London, and of the results obtained thereby. The machine is capable of breaking a heavy girder or a half-inch bar, of pulling asunder a thin wire or the shank of a best bow anchor, of crushing a great cube of cast iron or a common brick, and yet in all cases giving results strictly comparable and accurate. It has been in constant operation for over six years, and is now thought to have been brought to the limit of perfection. It can exert either a compressing or a tensional strain of over 350 tons with perfect safety. It will take in bars or columns of greater length than are generally used in construction, and it will test girders for transverse strain of any depth, and any length up to 30 feet, provided they are not more than 13 inches wide, measured across the flanges, the length between the supports while under test being 26 feet. The arrangements for measuring and recording the stretch and load on any specimen are extremely simple and ingenious, and heavy as the machinery is, the finish is so good, the knife edges so accurate, and the motion of the more massive portions so slow and so easy, that practically perfect accuracy is obtained. Mr. Kirkaldy has made most valuable and interesting experiments in iron, steel, building materials, alloys, springs, India rubber, tubes, belting, ropes, etc.

PRIVATE GAS MANUFACTURE.—Mr. Symes, of England, has lately patented a portable gas apparatus for small consumers, for which important claims are made and which is described in the *Jour. Soc. Arts*. It consists of a circular box or iron retort with a cover fitting into place like a valve so that no luting is necessary. In this is placed the gas-making material, which may consist of coal, wood, peat, in fact of any solid combustible house refuse. The retort may be placed and heated in an ordinary stove or kitchen range. The gas formed passes first into a tank of water, where it is deprived of certain impurities. This tank or main is ingeniously constructed with a safety valve, means of regulating the amount of water and hence the pressure, etc. Thence the gas enters a condenser, at the foot of which is a purifier, and from this passes into a gasholder and thence to the burners. The construction is said to be remarkably ingenious and simple. The apparatus requires very little attention. The first cost of the apparatus for 25 to 30 lights is given as 20 and 25 shillings (\$5 and \$6) per light, the rate decreasing with every increase of light. Made from "slack," the cost of the gas is estimated at 25 cents, from coal at $3\frac{1}{2}$ ¢ per ton with 10 per cent. canal at 45 cents, per 1,000 feet. The illuminating power is reported as equal to 18 candles or more, while the purity of the gas is stated to be perfect.

COPYING PRESS.—A clever application of science to commercial purposes has been made by an Italian gentleman, M. Eugenio de Zucato, of Padua. By means of the invention any number of copies of a manuscript or design, traced upon a varnished metal plate, may be produced in an ordinary copying press. The *modus operandi* is very simple. To the bed and upper plate of a press are attached wires leading from a small battery, so that when the top of the instrument is screwed down the two metal surfaces come into contact, and an electric current passes. An iron plate resting upon the bed of the press is coated with varnish, and upon this surface is written with a steel point any communication it is desired to copy. The letters having thus been formed in bare metal, a few sheets of copying paper are impregnated with an acid solution of prussiate of potash, and placed upon the scratched plate, which is then subjected to pressure in the copying press. An electric current passes wherever the metal has been left bare, (where the writing is therefore,) and the prussiate solution acting upon the iron, there is found prussiate of iron or Prussian blue characters, corresponding to those scratched upon the plate. The number of copies that may be produced by this electrochemical action is almost unlimited, and the formation of the Prussian blue lines, is, of course, instantaneous.—*Nature*.

MECHANICAL IMPROVEMENTS.—The substantial growth and prosperity of every town or city is based upon its mechanical improvements and industrial resources. Wherever the hum of machinery is heard, and the manufacture for any article is established, there, it may be safely asserted, are the true elements of thrift and progress; because production is the life of trade, and through the channels of trade flows the life-blood of the civilized and commercial world. Hence, the vital importance to all sections of establishing manufactories. Too long, alas! have they relied upon the workshops of New and Old England to supply them with cloths for raiment and implements for labor. Too long have they looked elsewhere for articles of daily use which might have been easily produced at home, by the proper application of a little capital, enterprise and labor. It is to this suicidal policy on the part of the people, that may be attributed to their present poverty and dependence.—*N. J. Mechanic*.

INFLUENCE OF INTENSE COLD ON STEEL AND IRON.—The correctness of the popular idea (strongly encouraged by railroad companies) that intense cold renders iron and steel more brittle, and may hence occasion the fracture of the tires of wheels during severe frost, which has caused many deplorable railway accidents, has long been doubted by practical physicists. The subject has now been again investigated; and from some papers read at a recent meeting of the Manchester Literary and Philosophical Society, (and published in *Nature*, No. 65, Jan. 26) by Sir W. Fairbairn, Dr. Joules and Mr. Spence, it would appear to be satisfactorily determined that a low temperature has no effect in rendering iron more brittle. Dr. Joule's experiments were particularly decisive, and consisted of applying weights suspended from the middle of steel needles at different temperatures, and letting the blunt edge of a steel chisel fall on cast-iron nails under similar circumstances. His general conclusion is that frost does not make either iron (cast or wrought) or steel brittle; and that accidents arise from the neglect of the railway companies to submit wheels, axles, and all other parts of their rolling stock, to a practical and sufficient test before using them.—*Eclectic Magazine*.

SHEATHING IRON VESSELS WITH WOOD.—Notwithstanding the acknowledged superiority of iron over wooden vessels for general service and durability, we have seen it stated that experience has shown the necessity for giving the former a protective sheathing of wood. At least this is the case on our great northern lakes.

The reason of this is, that touching at so many ports where the entrance is through narrow, rock-bound channels, there is much danger of striking a jagged point or the loose boulders on the bottom. In either case there is danger of puncturing a hole through the unyielding iron plates, which cannot be easily stopped or repaired without going into dry-dock. Wooden vessels, however, frequently strike even harder without receiving serious injury, the wood of the hulls being sufficiently elastic to receive the shock without the breakage of the shell sufficient to admit water, or so little as not to injure the cargo, nor require dry-docking, the damage being repaired from the inside, or a liberal use of pitch or oakum.

THE DANKS FURNACE—AN INVENTOR REWARDED.—It is stated that an agreement has been entered into between Mr. Danks, the inventor of a new puddling machine, and a combination of iron manufacturers representing the different iron districts in England, whereby the latter undertake to have 200 furnaces on his plan put up within six months, and, in consideration of his permission to do so, to pay him \$250,000 at that time, whether the furnaces are in operation or not.

It is intended, on payment of a further sum, to erect 260 more, which with the 50 before arranged for, will make something like 450 furnaces in England alone. This is such a revolution as has never before occurred in the history of perhaps any industry, and the more is it to be wondered at when it is remembered that, till July last, it was thought that hand-puddling must for ever continue, every machine to do away with it having, before that, entirely failed.

COPYING DRAWINGS BY THE AID OF THE INDUCTION COIL.—All draftsmen are acquainted with the device of puncturing holes through a drawing for the purpose of obtaining an outline and afterwards transferring the outline, by sifting fine plumbago or other powder through the small holes. The fatigue of making the holes by hand is great, and M. Caudey, of Lausanne, proposes to employ the induction coil for this purpose. A table covered with tin foil is connected with the negative pole, on it may be placed as many sheets of paper as the spark will pass through. The positive pole, consisting of a metal bar, insulated with gutta-percha, can serve as a pencil for copying the tracings. The metal point of the pencil being moved about on the contour and outline of the engraving, electric sparks spring across every time a connection is made, and puncture fine holes through the paper.—*Scientific American*

PHOTOGRAPHIC INVENTION.—Among the most remarkable of discoveries in photography is that claimed by one Johnson, an Englishman. The invention is a panoramic camera, which, by ingenious mechanism, sweeps the whole landscape and takes it on a plane surface embracing on one negative one-third of the circle. The exactitude of its operation is as singular as the beauty of the results. The pantoscope begins at one end of the view desired and goes round the horizon as one sweeps the telescope, the plate moving with a corresponding motion through the arc, which might be a circle if it were desirable.

STEEL RAILS.—Although we have no full statistics of the production and introduction of steel rails, it is still well known that their use is rapidly increasing. The follow figures are quite reliable:—8,500 tons in 1868; 12,000 tons in 1869; 45,000 tons in 1870 and 60,000 in 1871. It is very generally conceded that steel rails are to supersede iron in all the great railroads, turnouts, sidings, etc., almost everywhere. Their first cost is about 50 per cent. greater than iron; but they last so much longer that there can be no doubt of their economy. No steel rail has yet been worn out.

SCIENTIFIC PROGRESS.

CURIOUS PHENOMENON OF RECURRENT VISION. In the course of some experiments with a new double-plate Holtz machine, says Prof. Young of Dartmouth College in the *Amer. Jour. Science*, I have come upon a very curious phenomenon which I do not remember ever to have seen noticed. The machine gives easily intense Leyden jar sparks from 7 to 9 inches in length, and of most dazzling brilliance, when, in a darkened room, the eye is screened from the direct light of the spark, the illumination produced is sufficient to render everything in the apartment visible; and what is remarkable, every conspicuous object is seen twice at least, with an interval of a trifle less than one-quarter of a second—the first time vividly, the second time faintly; often it is seen a third, and sometimes, but only with great difficulty, seen a fourth time. The appearance is precisely as if the object had been suddenly illuminated by a light at first bright, but rapidly fading to extinction, and as if, while the illumination lasted, the observer were winking as fast as possible.

I see it best by setting up in front of the machine, at a distance of 8 or 10 feet, a white screen having upon it a black cross with arms about 3 feet long and 1 foot wide. That the phenomenon is really subjective, and not due to a succession of sparks, is easily shown by swinging the screen from side to side. The black cross, at all periods of visibility, occupies the same place and is apparently stationary. The same is true of a stroboscopic disc in rapid revolution; it is seen several times by each spark, but each time in the same position. There is no apparent multiplication of a moving object of any sort.

Measuring roughly the interval between the succession instants of visibility, in my own case the mean of 12 experiments gave 0.22 sec. as the interval between the first and second seeing of the cross upon the screen; separate results varying from 0.17 to 0.30 sec. Another observer found a mean interval of 0.24 sec.

Whatever the true explanation may turn out to be, the phenomenon at least suggests the idea of a reflection of the nervous impulse at the nerve extremities—as if intense impression upon the retina, after being the first time propagated to the brain, were there reflected, returned to the retina and from the retina traveling again to the brain renewed the sensation. I have ventured to call the phenomenon "recurrent vision."

It may be seen, with some difficulty, by the help of an induction coil and Leyden jar, or even by simply charging a Leyden jar with an old-fashioned electrical machine, and discharging it in a darkened room. The spark must be at least an inch in length.

NEW METHOD OF MEASURING THE VELOCITY OF ROTATION.—Prof. Dolbrae describes in the *Amer. Jour. of Science* a simple and exact way of doing this, which can be applied to measuring the velocity of wheels of any size, and every possible speed, without inconvenience or expense. The revolving disc is smoked on one side and a tuning fork, with a cone of india rubber fastened to one branch, made to vibrate while the disc is rotating. The point of the cone is touched to the disc. The number of undulations thus made once around the disc is counted. By this number the known number of vibrations made per second by the fork is divided and the result is the rate per second of the velocity. Thus if the fork makes 100 vibrations per second and there are two undulations in a single revolution, the disc turns 50 times per second. A single wave, or even half of one, is sufficient for the determination if the length be measured in degrees, in this case the velocity being equal to the number of vibrations of the fork per second, multiplied by the length of one wave in degrees, and the result divided by 360.

THE PROJECTED AUSTRIAN POLAR EXPEDITION. The results of the Austrian expedition of last summer have given rise to a strong attempt on the part of the Austrians to send another and larger expedition, the general plan of which was stated last December before the Vienna Academy of Science by Lieut. Weyprecht. The expedition is to be prepared for three summers and two winters as soon as the north coast of Nova Zembla is free from ice. A start will be made in order to reach the Siberian Islands the first summer if possible. The first winter is to be spent here and the second on the land which has been seen (but never reached) to the east of the New Siberian Islands. The objective point of the third summer is Behring Straits. If New Siberia cannot be reached the first summer, the expedition will winter the first time on Cape Tscheljuskin, the most northerly point of Asia, and reach New Siberia the second summer. The cost of the expedition is estimated at 175,000 gulden (about \$80,000) of which some 45,000 gulden have been subscribed already. The building of a ship for the purpose has been commenced.

ROTATION OF THE SUN.—Zöllner and Vogel have succeeded in applying the spectroscopic to the measurement of the velocity of the sun's rotation. Vogel found for the motion of a point on the sun's equator a velocity of 1.96 miles per second in one series of observations, and 1.64 miles in a second series. These velocities are greater than those at present admitted, and Vogel considers the observations at present as simply demonstrating the fact of the sun's rotation.

AURORAS.—Although auroras, says the *Mechanics' Magazine*, are much more frequently seen in latitudes north of ours than in our own, the North Pole is not the region around which the most splendid and magnificent displays of the northern lights are to be seen. As we travel further north from England, auroras become more and more common until a certain latitude has been reached, after which they become less frequent. And, strangely enough, the region in which the display is most commonly to be seen lies further north in some longitudes than in others. For example, an inhabitant of St. Petersburg would have to travel northwards to within 19 degrees of the Pole before attaining the region of the most frequent auroral displays. On the other hand, an inhabitant of Washington need only travel northwards to latitude 56 degrees to reach the place of the greatest auroral action. If we took a globe and marked down all the spots thus obtained, we should find that they formed a nearly circular band within which the North Pole would occupy a very eccentric position. In fact, we could represent the position of the band very well by constructing a ring of card or paper of such dimensions as to agree with the sixtieth parallel of latitude, and then pushing the ring down on the side of America and upwards on the side of Asia, until it passed through the most southerly part of Hudson's Bay and the most northerly part of Siberia. When fully formed, the auroral arch is a most symmetrical and beautiful apparition. It surrounds a space of slate-colored light, and from the arch itself luminous streamers dart with a quivering motion towards what is termed the magnetic meridian. Sometimes the ends of the arch are bent downwards near the horizon; but at others they are bent in a contrary direction. Hansteen relates that when he was at Christiania he twice saw the auroral arch in the form of a complete oval. Sometimes more than one arch has been seen. On one occasion the observers, who were sent by the French Government to winter at Bossekop, in Finland, saw no less than nine arches, separated by dark spaces, "and resembling in their arrangement magnificent curtains of light, hung behind and below each other, their brilliant folds stretching completely across the sky."

RESPIRATION OF FISH.—M. Grehaut, in the course of a lecture on respiration in fishes, states that, as shown by previous writers, fish are able to live in water until almost the whole of the oxygen it contains in a state of solution has been exhausted. This was shown by a chemical examination of some water in which live fish were preserved, and which, after the expiration of a certain time, showed an entire absence of oxygen, no change in the amount of nitrogen, and double the amount of carbonic acid.

Another curious fact noted by the lecturer was that fish breathe by their skin as well as by their gills, nearly as great a change in the composition of the gases contained in the water being observed when the animals were suspended up to their branchiæ as when the whole body was immersed. He also stated that the presence or absence of the swimming bladder had little effect on the product of respiration.

SPECTRUM OF THE ZODIACAL LIGHT.—This subject is intimately connected with that of the spectrum of the aurora, because Angstrom announced that the zodiacal light and the aurora both gave the same monochromatic spectrum. But Liass, the Brazilian astronomer, has lately been studying the zodiacal light under the very favorable sky of Rio Janeiro, and comes to a different conclusion. He finds that this does not differ from ordinary sunlight, but gives a continuous spectrum. It is, however, too faint to see any dark lines. This result is confirmed by Rev. T. W. Webb, of England, who has recently been observing the zodiacal light with a spectroscopic which shows the auroral line very distinctly. He sees nothing like the green auroral line in the zodiacal spectrum.

MOVEMENT OF STARS IN SPACE.—General Dufour, of Switzerland, in the course of a recent investigation, attempts to show that in the case of the movement of two stars around a point supposed fixed, this point must be in motion. He also concludes that the curve is plane, and that the stars remain in the same plane during their translation; and the inference is that these stars have both received one impulse and a parallel movement, also that the movement of the apsides proves that the centre of gravity of the system is displaced not according to a straight line, but a curved one.

NEW FOSSILS IN KANSAS.—The first remains of Pterodactyls ever found in this country were fragments of a gigantic species, *P. occidentalis*, discovered by Prof. Marsh, in 1870, in the upper Cretaceous shale of western Kansas. The next year two other species, *P. ingens* and *P. velox*, were found by the same party in or near the same locality (near the Smoky River), showing that the peculiar reptiles, so long deemed wanting in America, were apparently well represented here during the later cretaceous. They are described in the April *Amer. Jour. of Sci.*

FLORA OF THE CANARIES.—According to M. De Candolle, the flora of the Canary Islands, while containing scarcely any plant peculiar to the western coast of Africa, includes a large number found also in Europe. This fact would seem to indicate that these islands were long ago united to Europe by a land connection, while they appear to have always remained separate from Africa.

FIELD AND FARM.

The Kirby Two-Wheeled Mower.

Our object in presenting the accompanying illustration, is to attract the attention of the readers of the PRESS, to a new feature for this coast, in mowing and reaping machines. We are aware of the reputation long since awarded to the old Kirby mower, and that it has successfully maintained its excellent reputation; its complete success, as claimed by its inventor, having never been excelled in the history of mowing machines.

In its present improved form, it possesses a perfection of principle that secures the execution of the best possible work. It has the flexibility and independent motion of frame and finger-bar peculiar to all Kirby machines, cutting close and clean over all variations of ground. One of its great excellencies is, its jointed connecting rod—or pitman—a feature belonging exclusively to this mower; the joint in the connecting rod working simultaneously with the joint in the finger-bar, keeps the connecting rod always in perfect line with the cutting apparatus, allowing the knife to run perfectly free, without binding, at whatever angle the bar may be raised or folded.

By a convenient lever, the bar is raised to pass any obstruction, even a tree, or can be folded completely across the machine in front for transportation, without throwing out of gear, stopping the team, or the driver leaving his seat; and yet can be instantly thrown out or into gear without stopping when desired, by either foot or hand. No stopping to fasten finger-bar in position when folded. A loose or rigid tongue as desired, without stopping.

Another peculiar feature is the raising or lowering of the points of the guards or fingers without stopping, giving them any pitch or angle to suit the grass or ground. The driver's seat is also a lever to command the heel of the cutter bar raising or lowering it at pleasure; and as if to make it a more perfect machine over others, it possesses a device expressly applicable to California machines, by which the connecting rod or pitman will take up its own wear thus preventing all shake or jar and breaking of the knives.

Our illustration represents it as a mower, but it possesses the combined feature of reaper or mower, and with the "Baltimore" self-rake attachment, becomes as claimed by the proprietor, the most perfect reaper the world has ever seen. The proprietors, by their managing agent Mr. Omar Jewell, express an earnest wish that a public trial of the Kirby machine as a combined reaper and mower against all other machines, be had at the proper season, under the auspices of the State Agricultural Society, or its officers, or any county or district in California.

For an illustration representing this machine with the self-rake attachment, and an advertisement of additional points of merit, we refer the reader to our advertising pages.

SHEEP AS WEED EXTERMINATORS.—It may not be known to farmers in general, that it is a common practice in some parts of the country to turn sheep into the potato field, for the purpose of eating down the weeds. The sheep will not touch the potato vine. This pasturing with sheep is advantageous, when the crop is a late planted one, so that the hoeing cannot be completed until after the haying or harvesting is finished. At the growing season it is the farmer's aim to keep down the grass and weeds, so that they may be covered by the cultivator and hoe, when these are used. Pasturing with sheep will attain this object. Early planted crops, the cultivation of which is completed in the early part of the summer, frequently become grassy and weedy, before the time of digging, when the size of the tops precludes cultivation. In this stage the sheep are economical weeders. It is hardly necessary to mention that the feed thus given to the sheep, makes a double profit, inasmuch, as it costs absolutely nothing, while labor is saved, and weeds prevented from seeding.

ECONOMIZE THE WASTE.—A large quantity of valuable fodder may be secured by saving the leaves of turnips, beets or mangels by burying them in the ground. They should be packed tightly and covered closely so that the air is excluded. In this manner they will keep until spring. In the same way the pulp of beets from the sugar factory has been kept good for a lengthened period.

Remedy for Cabbage Lice.

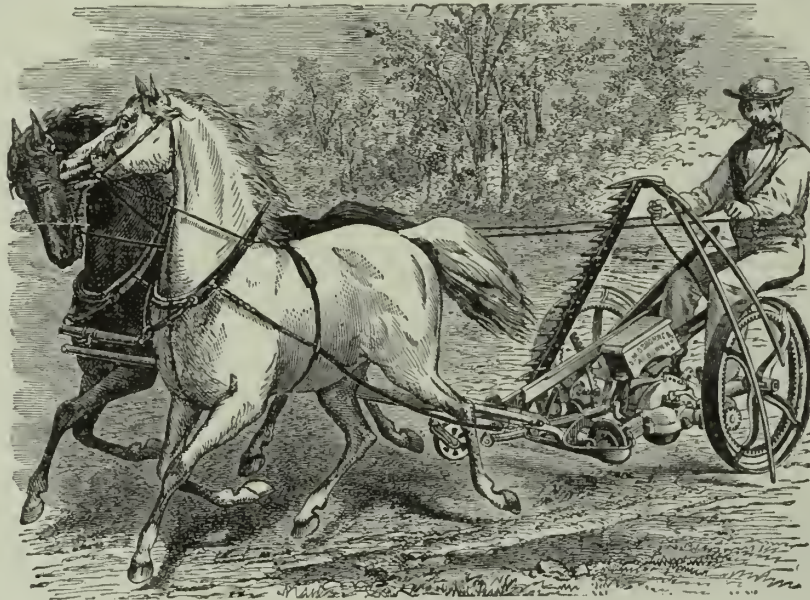
C. C. Best, of Jordon, New York, writes to the *Tribune* as follows: I lost all my cabbage last year from these pests, after trying remedies innumerable, recommended by countless persons who knew "just how" to fix them. But this year I "have met the enemy and they are ours," with a very simple remedy which I picked up from a nursery-man. It is this: Buckwheat flour sprinkled on the cabbage (and lice) when the dew is on, or the cabbages are wet. I have made but one application—a very thorough one, though—and there is not a louse to be found on a single plant. Two weeks ago I gave up my plants as ruined, and was intending to ask you for a remedy. And not only cabbage plants, but it is equally efficacious with the currant-worm, rose-bug, etc.

Another writer speaks as follows with regard to this pest: The lice on cabbage caused a serious loss to farmers last year. They tried soot, ashes, sulphur, kerosene and tobacco, but they have proven useless. We have heard of one case, however, where the gentleman told us that he had raised a good crop of cabbage by sifting about a tablespoonful of table salt on each head in the morning, while the dew was on. In this manner he rid the cabbages entirely of lice.

POTATO PRODUCTION.—As an experiment in developing the productiveness of potatoes, a Rev. Dr. Wrenford of Nairnshire, Scotland, as we learn by our foreign ex-

RIGHT AND WRONG WAY TO MILK.—The *Irish Farmers' Gazette*, publishes the following from Professor Dick, of the Edinburgh Veterinary College, on the manner of milking:

The operation of milking is performed differently in various parts of the country. In some, the dairymaid dips her hands into a little milk, and by successfully stripping the teat between her fingers and thumb, unloads the udder. This plan, however, is attended with the disadvantage of irritating, more or less, the teat, and rendering it liable to cracks and chaps, which are followed by inflammation, extending to the rest of the quarter. These effects may be, and are, almost entirely avoided, by the most scientific plan of milking adopted in other parts of the country, where, instead of drawing down or stripping the teat between the thumb and fingers, as I have stated, the dairymaid follows more closely the principles which instinct has taught the calf. She first takes a slight hold of the teats with her hand, by which she merely encircles it, then lifts her hand up so as to press the body of the udder upwards, by which the milk escapes into the teat; or if, as is generally the case when some hours have elapsed between milking times, the teat is full, she grasps the teat close to its origin with her thumb and forefinger, so as to prevent the milk which is in the teat from escaping upwards; then making the rest of the fingers to close from above downwards in succession, forces out what milk may be contained in the teat through the



THE KIRBY TWO-WHEELED MOWER.

changes, last year planted twenty-six tubers, each by itself uncut, in a pit dug three feet deep, but with a foot of intermixed manure and soil in the bottom, so that the actual depth was about two feet. At the time of planting, only two inches of soil was put on the tubers; and, as the plant grew higher and higher, more was added until the pit was filled. The weight of the seed potatoes was about 11 lb., and on digging the crop, the yield was found to weigh 312 lb., and to number 627 tubers, or an average of about half a pound each. Only 57 were small, weighing 1½ ounces each or less, while 205 weighed over a pound apiece, five of them going above two pounds. In addition to the peculiar method of planting, the leading stalks were pegged down from time to time, and as a result of this, in one case, 13 potatoes weighing 6¼ lb., were dug within a circle around the collar of the plant, and about 18 inches from the root. Potatoes planted in the ordinary way suffered much from the drought, but in this experiment the depth at which the tubers were placed, prevented their feeling the scarcity of moisture.

NEW SORREL THEORY.—In a communication to the *Germantown Telegraph*, Mr. Josiah Clark, of Manchester, N. H., says: "Sorrel is not, as is generally supposed, the result of sour soil, but the reverse. Observing years ago that sorrel was more abundant on sweet than sour soil, I hauled apple pomace on a piece where nothing but sorrel grew, and harrowed it and put grass seed in. The result was, sorrel disappeared and grass came in its stead. Anything that tends to sour, with fertile matter added, will work a cure just as alkali rectifies the acidity in the stomach. The sour waste of breweries, coarse, wet, sour litter, vinegar, or anything that is sour, worked into the surface of the soil, will tend to eradicate sorrel."

opening of it. The haid is again pressed up and closed as before, and the milk drawn easily and freely, without the tugging and wrenching inflicted by clumsy milkers.

JUDGING SOIL BY TIMBER.—Almost any one knows that the quality of soil may in a great measure be determined by the timber which grows upon it, but of the exact nature indicated by the primitive trees people are not so well posted. Mr. B. Smith, of Patomas, Ohio, writes to the New York Farmers' Club of this matter and says that white oak land is poor; that red oak and soft maple also indicate poor land; that shell-bark mostly grows in cold, wet land; that flat beech and sugar-maple lands are good for summer crops and grass, but not for wheat; that rolling beech and sugar lands where large poplar and black walnut abound are fine grazing lands, and produce, when new, large crops of all kinds except wheat, where it is winter killed; that large white oak and chestnut growing together, and black oak and hickory indicate a loose subsoil, and lands where water soon sinks into the subsoil are much the most valuable for grain; that a soil that will raise large crops of all kinds of grain, and then clover and timothy, and after they run out will come in with green grass and white clover, is the best.—*Norfolk Virginian*.

CURING CORN FODDER.—The *Country Gentleman* says:—"Fermentation in cut fodder may be prevented by making large and erect shocks in the field, to remain there for several weeks, or by building small stacks, and placing three or four erect rails in the center, around which the stack is built, thus leaving an opening or chimney through which the vapor escapes; or by scattering them to dry, over the tops of the bays of hay in the barn and sheds to a thickness of some three feet."

EXPERIMENTS WITH CORN.—A. J. Hamilton, of the Western Experimental Farm, located at Indiana, Pa., writes at length of certain tests made during 1st season, which seems to prove—First, "An average increase of nearly fourteen bushels to the acre in favor of subsoiling, and that the plots planted with eud grains only gave sixty pounds of corn more than those planted with the butt grains."

Second, "That fifty bushels of lime increases the product thirty-one bushels on the acre; 100 bushels of lime increases ten and a half bushels; while 200 bushels to the acre increased the yield to sixty-three bushels. He cannot account for the discrepancy between the application of 100 bushels and 200 bushels. Although he claims that the soil will not partake of lime freely. The previous year the lime was applied in the same manner with different results. He further states that it was the special instructions to have three stalks to the hill on all the plots, and these experiments were made upon this basis, except plot 423, one stalk at twelve inches. Other experiments have been made upon oats, barley, wheat and grass, the results of which we have not yet learned."

LIME IN THE HAY-MOW.—The *New York World* in one of its issues last fall published a successful experiment in saving damp hay by a little lime scattered over it when mowed. The writer kept a cow and had a patch of clover which was always cut in full bloom to save its nutriment. Although sweated in cock it was very difficult to make it dry enough to mow; but by scattering over it as it was stowed away a few quarts of dry air slaked lime it became dry and entirely free from mildew. He told many farmers of the experiment, but none tried it. It was too much like book-farming. But it is no wonder that the old fashioned farmers have such a horror of book-farming, as heretofore the most of those who followed it, continues the writer, have either failed in practice, or carried on their farming at so great an expense that the increase never paid the malting.

ADVANTAGES OF THE ROLLER.—The *Mirror and Farmer* thinks it strange that so few cultivators use this labor-saving instrument. The roller has long been favorably thought of in Great Britain, and is there considered very necessary for an improved state of husbandry. It is useful in breaking the lumps of baked earth in a clayey soil, and for passing over newly-sown land. On dry land it presses down the soil and makes it less dry. A proper roller should be about six feet long and about twenty inches in diameter, round, and of stone, and when once made will last an age. The spike roller is much recommended for mellowing clayey soils. It also acts beneficially in passing over old meadows that are grass-bound, for the purpose of making the grass more thrifty.

BROOM CORN FOR CATTLE.—Unquestionably, the best way to dispose of broom corn seed is to feed it to the fowls. The next best mode is to give it to sheep; they are fond of it, and fatten upon it nearly as fast as on Indian corn. Ground with corn, rye, oats or barley, it is profusely fed to cattle, and when mixed with wheat bran it is good for milch cows. The Shakers frequently feed it to horses, and at the season of the year when this grain is not only abundant, but at hand, they use it exclusively. My judgment is that with corn at 80 cents, oats 48 cents, and rye 80 cents, for grinding and feeding to cattle, broom corn seed is worth between 50 and 60 cents a bushel, although it would be more valuable to dispose of in some other way.—*Am. Ins. Farmers' Club*.

DIVERSIFIED FARMING.—The *Utica Herald*, located in the centre of the dairy specialty of New York, has the following advice, based on an intimate acquaintance with that interest: "We would urge upon our dairymen the importance of adopting a somewhat diversified system of farming. Every farmer should raise his bread, vegetables, meat and fruit. Wheat, corn, potatoes, oats, etc., should be cultivated, so that you may not be wholly dependent upon one single crop, a failure in which would be most disastrous. If you grow what articles you want to use, you will not be subject to the fluctuations of the market, and possibly have to pay dear for them, when you are compelled to take low figures for your butter and cheese. Keep a few sheep for stocking-yarn, and for mutton, and to have a few pounds of wool to sell or exchange for cloth. In short, farm it so as to be independent as possible, and to keep your hand in, so that you and your boys may know how to do something else besides taking care of stock, milk and churn, or run to the cheese factory."

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Record, April 27: OUR CROPS.—The farmers in the agricultural section of the county never had better prospects for an abundant crop. The fields all over the county present a most beautiful appearance, and many of our farmers are predicting low prices in consequence. But of this we imagine there is but little danger. The range of prices does not depend entirely upon crops in Butte county; besides, it is better for farmers to have a good crop to bring moderate prices than a short crop at a higher figure. As indicative of the amount of grain sown in this county, we mention three men who have about 10,000 acres of growing wheat, viz: Gen. Bidwell, 3,000; D. M. Reavis, 3,500. and Mr. Silsby, 2,500. There are many others in the county who have nearly the same number of acres of growing grain, while nearly every farmer in the county has from 100 to 500 acres. There is scarcely a doubt that the price of wheat will range less than \$1 per bushel, and should it rule that low, the abundant crop will still make financial matters easy for all engaged in producing grain. Besides, with the facilities for harvesting and transporting grain, \$1 per bushel is not a ruinous price. A ride through the grain fields of Chico at the present season enables a man to witness a world of wealth in a beauty and freshness that excels that of the most valuable mine in the world, if for no other reason, because of its annual return.

EL DORADO.

Democrat, April 27: MUD SPRINGS AND VICINITY.—The ruler of spring has, with us, lavishly spread his carpet of green in all the loveliness of a new creation. How beautiful! No gnarled, yellowish tinged or decaying vegetable matter to poison the air and generate miasmatic effluvia to be seen. What a delightful country this would be if laughing spring moistened the heat of summer, then warmed the heart of gloomy winter. The orchard, grainfield and garden, all have the symptoms of a healthy crop, while the farmer smiles and merchant jokes in the soothing hopes of a bountiful harvest.

COLD.—We have had some extremely cold and disagreeable weather during the past week. On Thursday morning the ground was covered with a thick coating of frost.

ANOTHER.—There was a slight shock of earthquake felt here by those of our citizens who were awake, or not too soundly asleep, on Wednesday morning about two o'clock. It was sufficient to shake windows and loose articles so as to make them jingle.

FRESNO.

Expositor, April 24: The grain crop on the large farm of Mr. A. Y. Easterby, is, we learn from Mr. J. Church, doing finely, and will no doubt yield heavily. Mr. Lohse, under whose supervision the farm is, is deserving of much credit for demonstrating the practicability of farming upon a large scale on lands "only fitted for grazing purposes." The success of this crop will be the means of causing thousands of acres of land of the same class to be despoiled next winter by the plow. People of energy and nerve will never take the word of those who "profess" to know that farming cannot be successfully carried on in this county, but stubbornly insist on trying for their own satisfaction. It always was that way with some people.

KERN.

Californian, April 18: **HEAVY.**—A heavy frost visited Visalia on Saturday night last. The peaches are all killed, so are the figs and even the wheat. One man whose grain was very thriving and was already heading, says his entire crop, estimated at 10,000 bushels, is entirely destroyed. There was a very slight frost here one night last week, but no damage was done.

RAIN.—For several hours this morning there was a steady fall of warm, gentle rain, with no spiteful, fitful winds such as usually accompany April rains, but just a soft, subdued, sort of velvet-footed rain, that gave a hushed patter to the roof, and came down as if it feared to awaken the birds, and were endeavoring to steal a march upon the wild flowers.

MERCED.

Argus, April 27: **CROPS ON MARIPOSA CREEK.**—We were out among the farms in the southern part of the county this week, and found the people in the best of spirits, all anticipating an unusually large har-

vest. Upon the richer lands, lying along the creek, the early grain is up as high as a man's breast, the barley being already headed out and giving promise of making a very heavy crop. While in Plainsburg we observed great activity in the preparation of mowers, rakes, wagons, etc., for the haying, which will commence in the course of a week. The amount of grain which will be harvested there this season will be immense. The average this year is perhaps double that planted in any former season, and as the season has been more favorable than any preceding one since the settlement of the county, there will be an enormous surplus produced.

THE LATE RAIN.—Rain fell here on Tuesday evening last to the amount of one-half inch, according to the rain gauge kept by Mr. Leeson. Last week about as much fell in the several showers we were favored with, and the ground is now in good condition for plowing. Crops are growing as rapidly and look as well as could be expected.

SACRAMENTO.

Bee, April 27: The report that the grape, currant and other crops had been materially damaged by the frosts of April 11th, seems to have been premature. Our observation and information lead to the conclusion that the harm, if any, that has been done by frost in the vicinity of Sacramento is not worth naming.

And the same is in good part true of the late north winds. The ground was so moist and the early sowed grain covered it so rankly that the sirocco passed away without damage thereto, while the barer fields and later cultivated farms which were injuriously affected, were soon brought into harmony again by timely and refreshing showers.

All the grain that was sowed anterior to the heavy rains appear to be in the most fruitful condition, while most of the fields sown since may have a hard struggle to make a crop. A good shower or two will bring them through well.

There is a prevalent fear among farmers that they cannot secure sufficient labor to save their great harvest, but the season is long, and the grain after being cut by horse power, as it will be, may lie on the ground for months without damage. We do not imagine that any crop will be lost for want of labor to handle it.

Folsom Telegraph: THE CROPS.—The grain fields in the valley of the American look well, except a field or two that was sown late. The fields towards the foothills look much better, however, than those nearer the city of Sacramento, and this has been the case for several years past, where the crops have invariably been good.

SANTA CLARA.

Index, April 27: **OUR GRAIN PROSPECTS.** The coming harvest in this valley promises to be so bountiful that it is feared that a sufficient amount of help cannot be obtained to gather it before the rains of next winter set in. The country for miles and miles on either side of Salinas City is covered with growing grain. The amount is estimated at one hundred and ten thousand acres. One ton to the acre is not a high figure to put the yield of this land. This will give us one hundred and ten thousand tons of grain. Sum this up at the low price of one and one quarter of a cent per pound and it will give the snug little sum of two million seven hundred and fifty thousand dollars. Surely farmers in this section have cause to rejoice.

SAN LUIS OBISPO.

Tribune, April 20: **WEATHER AND CROPS.** The drooping spirits of our agriculturists have been revived during the past week by a series of refreshing showers, which have secured the crops of San Luis Obispo against the possibility of a failure. We think the present year will be one of unparalleled prosperity in this section; as the growing crops never gave greater promise of an abundant harvest.

STANISLAUS.

News, April 26: **EFFECTS OF THE FROSTS.** We have been informed that the frost of last week was very severe in the vicinity of Knight's Ferry. It is feared that the entire grape crop of Schell & Krouse's extensive vineyard is completely destroyed. If this should unfortunately be so their loss cannot be much less than \$15,000. Knight's Ferry is noted for its many extensive, beautiful and prolific orchards, gardens and vineyards, all of which have sustained more or less loss from the effects of the frost. We regret that some friend has not prepared for us a statement of the injuries sustained, but from what we can gather the loss will aggregate many thousands of dollars.

SAN BERNARDINO.

Guardian, April 20: **ENCOURAGING.**—An old—and one of the best—farmers in the county informs us that there will be more grain made in the county, this year, than was ever made before. There is more land placed in cultivation in the county, by several thousand acres, than was ever before planted. The prospects are truly encouraging. We shall need all the grain we can possibly raise, this year. The immense emigration to Arizona and the increasing travel to the Clark Mining District, will give our farmers a ready sale for all the grain they can raise.

REMARKABLE WEATHER.—We have experienced more cold weather during the first two weeks of April than at any time during the month of February. Several nights were cold enough to freeze water. Something remarkable for this climate at this season of the year.

MORE RAIN.—Last Tuesday rain began to fall early in the morning and continued to fall at intervals, during the day. Wednesday was a bright clear day, but cold; on Thursday morning the clouds began forming and about 9 o'clock it began raining again.

GRASSHOPPERS.—Messrs. Clyde and Cox inform us that grasshoppers in the Warm Creek portion of our valley are very numerous, and that the farmers entertain a belief that the later crops will be partly destroyed by these pests.

SANTA BARBARA.

Press, April 20: **FEED.**—Abundance of feed for all stock in the county is now secured. The growth of the grass had been in a great measure checked, but the recent rain will revive it and greatly increase the quantity. The stock interest in this part of the State is in a flourishing condition.

FRUITS.—This year will excel any previous year for the abundance and variety of the fruit crop in this region. The almond crop is entirely satisfactory. All three year old trees of the best variety will this year pay more than corn would on the same ground. All other fruits are as promising.

SUGAR CANE.—Captain Mayhew's Sandwich Island upland sugar cane is growing well. He has some two hundred and fifty plants which are sending up fine canes. Everything now indicates that this plant will flourish here in perfection, and prove to be an important addition to our resources.

CROPS.—Never in the history of this section has the prospect for abundant crops been so good. The wheat crop is almost certain to prove entirely satisfactory, while barley and oats could not be better. Farmers have every reason to rejoice and be thankful.

THE RAIN.—A most timely rain has fallen the past week, being an abundance to bring the crops on in perfection, if no more should fall this season. The ground is in fine order for plowing, and our farmers are busy in preparing for planting corn, beans, etc. Rainfall on the 15th, 1.16 inches; on the 16th, 0.16, and on the 17th, 0.05, making a total of 1.37 inches.

SAN JOAQUIN.

Republican, April 27: **GRAIN ON THE WEST SIDE.**—In conversation to-day with a gentleman largely interested in farming on the west side of the valley we obtained some information in regard to the proportion of early and late sowed and the prospect for maturity of the grain sowed after the first considerable fall of rain, as well as that put in the ground still later in the season. Taking the whole west side of the river, the average acreage sown before the heavy rains is about one-fourth of the whole. This one-fourth is so far advanced that it will make a good crop, if no more rain falls. About one-fourth of the whole was sown immediately after the first heavy rain fall, and will yield half a crop without more rain. One-half of the entire acreage was seeded late, and no rain of consequence has fallen since the grain went into the ground.

TEHAMA.

Sentinel, April 20: **RAIN.**—On Sunday evening last it commenced raining and for three days and nights it was kept up almost incessantly, giving to the farmers a bountiful supply of aqueous fluid, so much needed at this time, in consequence of the prevailing dry north winds of the past few weeks. As far as the eye can reach, from our office window, above and below on the Sacramento river, the crops never presented a healthier and more flattering prospect for a large yield. As this season has been more propitious for cereals than any previous one, and as there has been a large excess of land cultivated, we opine that, exclusive of home consumption, California will be able to export, in

wheat alone, 25,000,000 bushels this coming fall.

TULARE.

Delta, April 25: **ORANGES.**—A gentleman well known in this county is prospecting among the foothills for a suitable place to establish an orchard and vineyard on a large scale, the specialty to be oranges and choice grapes. The scheme emanates from a San Francisco capitalist, the land not to be less than 160 acres. The location will be chosen, if possible, where it will be absolutely safe from frost, and the whole tract will be planted at once after the location is decided. It is an enterprise that will probably, if at all successful, lead to others similar, and so promises to be productive of material wealth. The gentleman has found a locality that was not touched by the late frost, though they were more severe than have been known for many years. It seems that there is a thermal belt along the line of our foothills at an altitude of four or five hundred feet above the bed of the valley, where frosts are seldom or never met with. A slight frost is by no means fatal to orange culture. Any climate where the thermometer always ranges above 22 F. is well suited for that business.

THE FRUIT AND THE COLD WEATHER.—For the last two weeks the weather has in the main been quite cold with occasional frost. Around Junction City the peaches are believed to be severely damaged. In Weaver Basin the peaches are generally killed. Mr. Cochell tells us that he has looked closely and that not more than one in a hundred of young peaches has escaped. All other fruits are so far unhurt and, unless Jack Frost forbids, will be plenty.

YOLO.

Democrat, April 27: **ALL RIGHT AGAIN.** The light rains with which this region was blessed the early part of the week have done a great deal of good to the late sown grain, clover, etc. Yolo may be confidently looked to for three or four million bushels of wheat this year. The early sown, comprising the great bulk of the crop this year, never looked better.

YREKA.

Union, April 20: **FRUIT KILLED.**—It seems to be generally conceded that the peaches have all been "done for." The chances are that "nary a peach" will be produced in the county this year. What is the exact condition of the other kinds of fruit we cannot speak with confidence. It is generally believed—hoped at least—that the apples are not injured much, if any.

OREGON.

Oregonian, April 20: The yield of wheat for the coming harvest in this State is variously estimated at from thirty millions to thirty-five millions of bushels.

CROPS IN YAMHILL COUNTY.—A gentleman just from Yamhill county gave us a call yesterday. From him we learn that the prospects for a good crop in that county are very flattering. Wheat and oats are looking well. The farmers are busily engaged in putting in their crops. The wheat of the past month has been such as to give strong hopes of an abundant yield of the cereal this season. Fruit crops look promising; but the nights are rather too cool, and caterpillars are beginning to make their unwelcome appearance. Unless some means are devised to destroy them, their ravages will seriously affect the crops. A good degree of prosperity seems to exist among the Indians on the Reservation. They are engaged in planting unusually large crops of potatoes, vegetables and corn this season. The disaffection which was manifested by them some time ago at the frequent changes of agents, has subsided in a great measure, and they have gone to work with a purpose. The saw-mill on the Reservation has been repaired and is in fine running condition, and the old dilapidated huts are being repaired, or new ones built. Mr. P. B. Sinnott, of this city, has taken charge of the Reservation.

D. B. HARRER, furnishes the following to the *Advocate*, from Goose Lake Valley, under date of March 20: "In this valley our winter has been a very pleasant one. We have had but very little snow in the valley, but a great deal in the mountains. We have had no cold weather at all. Our deepest snow was only six inches, and did not lay on but two or three days. We have had considerable rain. Stock of all kinds looks well. We have grass now about two inches high. After spending our winter here in this valley, I pronounce this a very desirable climate. We have a very beautiful valley here about forty miles in length, and about fifteen in width including the lake.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.)

FOR THE WEEK ENDING APRIL 16TH, 1872.

FRUIT DRIER.—George W. Stevens and John Gray, San Francisco, Cal., assignors to said Stevens.

LAMP BRACKET AND REFLECTOR.—Emil Boesch, S. F., Cal.

FORMING BLOCKS FOR PAVEMENTS.—George L. Eagan, S. F., Cal.

FARE BOX.—Carlton Newman, S. F., Cal., assignor to himself, George P. Kimball, and R. L. Ogden.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Our National Park.

We have received a number of maps and documents in relation to the Great National Park in the Yellowstone Reservation in Montana and Wyoming Territories. The land reserved lies near the head waters of the Yellowstone river, commencing at the junction of Gardiner's river and the Yellowstone, and running east to the meridian passing ten miles to the eastward of the most easterly point of Yellowstone Lake; thence south along that meridian to the parallel of latitude passing ten miles south of the most southern point of Yellowstone Lake; thence west along that parallel to the meridian passing fifteen miles west of the most western point of Madison Lake; thence north along the meridian to the latitude of the junction of the Yellowstone and Gardiner's rivers; and thence east to the place of beginning.

This area of land has been reserved and withdrawn from settlement or sale, and set apart as a public park or pleasure ground, for the benefit of the people of the United States. It is to be under the control of the Secretary of the Interior, who is to make such rules and regulations as he may think proper for its care and management. All timbers, mineral deposits, natural curiosities or wonders are to be preserved in their natural condition, and remain undisturbed. The Secretary may, if he sees fit, grant leases for building purposes, for terms not to exceed ten years, of small parcels of land, at such places as may require houses for the accommodation of visitors. All the revenue from this source is to be expended in building roads, bridge-paths, etc., in the park. The Secretary is to provide against wanton destruction of game and fish in the reservation, and against their capture for the purpose of profit.

The land is, as a general thing, not susceptible of cultivation, and the entire area within the limits of the reservation is over 6,000 feet above sea level. The Yellowstone Lake, which occupies an area 15 by 22 miles, or 330 square miles, is 7,427 feet. The range of mountains that hem the valleys in rise to a height of from 10,000 to 12,000 feet, and are covered with snow all the year round. These mountains are all of volcanic origin, and it is not probable that any mines will ever be discovered there. During the months of June, July and August the climate is most invigorating, with scarcely any rain or storms of any kind. There is frost every month of the year. This whole region was, in comparatively recent time, the scene of the most wonderful volcanic activity of any portion of our country. We have given, at different times, detailed descriptions of some of the wonders of this region, which will in a few years be a place of resort for all classes of people from all parts of the world.

The project of establishing a Grand National Park in such a locality is worthy of the age and the nation which has originated the idea. It will become, in future ages, a place for the world's resort, where the grandeur of nature and all her wonderful displays of power and energy, as put forth in the tempest, the earthquake and the volcano may be seen, studied and admired in the great laboratory within which the fires have been, as it were, but just extinguished.

The Importance of the Farmers' Work.

The following extract from Edward Everett's address before the New York State Agricultural Society, is well worth reproducing:

"Strike out of existence, at once, ten days' supply of eight or ten articles, such as Indian corn, wheat, rye, potatoes, rice, millet, the date, the banana and the bread-fruit, with half a dozen others which serve as the forage of the domestic animals, and the human race would be extinct. The houses we inhabit, the monuments we erect, the trees we plant, stand in some cases for ages; but our own frames—the stout limbs, the skillful hands that build the houses, and set up the monuments, and plant the trees—have to be built up, re-erected every day; and this must be done from the fruits of the earth, gathered by agriculture. Every thing else is luxury, convenience, comfort—food is indispensable. Then consider the bewildering extent of this daily demand and supply, which you will allow me to place before you in a somewhat coarse, mechanical illustration. The human race is usually estimated at about one thousand millions of individuals. If the sustenance of a portion of these multitudinous millions is derived from other sources than agriculture, this circumstance is balanced by the fact that there is a great deal of agricultural produce raised in excess of the total demand for food.

Let, then, the thoughtful husbandman who desires to form a just idea of the importance of his pursuit, reflect, when he gathers his little flock about him to partake of the morning's meal, that one thousand millions of fellow-men have awakened from sleep that morning, craving their daily bread with the same appetite which reigns at his family board; and if, by a superior power, they could be gathered together at the same hour, for the same meal, they would fill both sides of five tables reaching all round the globe where it is broadest, seated side by side, and allowing eighteen inches to each individual, and that these tables are to be renewed twice or thrice every day. Then let him consider that, in addition to the food of the human race, that of all the humble partakers of man's toil—the lower animals—is to be provided in like manner. These all wait upon agriculture, as the agent of that Providence which giveth them their meat in due season; and they probably consume in the aggregate an equal amount of produce; and, finally, let him add, in imagination, to this untold amount of daily food for man and beast, the various articles which are furnished, directly or indirectly, from the soil, for building material, furniture, clothing and fuel. The grand total will illustrate the primary importance of agriculture, considered as the steward—the commissary—charged with supplying this almost inconceivable daily demand of the human race and the subject animals for their daily bread; a want so imperative and uncompromising that death, in its most agonizing form, is the penalty of a failure in the supply.

Silk Interests—Important Offer.

Samuel Brannan has now upon his farm at Calistoga, 8,500 mulberry trees, the leaves of which are the food of one of the most interesting and curious creatures in the world, the silkworm. These trees are some five years old, and their leaves can be used this year for feeding the worms. Mr. Brannan has invested a very large sum of money in raising the trees. He does not profess to know anything practically about the business of silkworm raising or silk culture. His object in planting the trees was to found an important industry in a locality where he is a large land owner. He also had the creditable object in view of developing and connecting his name with the production of native silk. Silk raising is one of the most extensive, scientific and profitable branches of the world's industry.

Mr. Brannan has just made the extremely liberal offer of allowing twenty or thirty persons who are skilled in silkworm culture to have the free use of all his mulberry leaves, and he also offers to erect whatever class of buildings they say is requisite for the proper conduct of the business. We presume there are plenty of Frenchmen, Germans and Italians here who will embrace this offer, which certainly appears to be framed in a spirit of enlarged liberality and enlightened progress.

Visitors at Calistoga from the silk-raising districts of France and Italy have informed Mr. Brannan that the mulberry trees on his farm would, in a few years more, be sufficient to support the population of five ordinary French villages. A whole family in France frequently derives its living from one mulberry tree. There is a tree on the banks of the Rhone which is known to be 300 years old. Frost does not injure the mulberry, blight passes it; destructive insects and animals do not touch it; parasites do not attack it. Nature made the curious tree for the silkworm, and the still more curious, (nay mysterious) worm to devour the leaves of the tree; leaves which, indirectly, are for the dressing of the females of all civilized nations. The mulberry tree attains a growth as elevated and spreading as our largest native oaks.

We are, perhaps, occasionally inclined to exaggerate the future possibilities of growth and development of some of our native industries. This it is hardly possible to do, however, in the case of silks. We may have failures and delays, doubts and almost despair in the path leading to its perfect and permanent establishment; but the mulberry tree can be grown here—that we know—and our climate has, of all

others, the requisite heat, and above all, the requisite dryness—that, too, we know—and with these two advantages, success in and the general spread of silk culture in California, are only questions of time, whether of five, ten or twenty years, rests entirely with ourselves.—*Bulletin.*

To Protect Fruit Trees From Birds.

Some time since Mr. M. E. Emerson, of Strawberry Valley, enclosed the following description of a device for the protection of fruit trees from birds, and also "for protection to the birds by keeping them away from the trees while the fruit is ripening." Mr. E. has found the device very effectual for the purpose designated, having used it for three years; and as it can be made by any farmer's boy during one or two leisure evenings, it is well worth trying. Of course several machines would be required for a large orchard. There is no patent for the device, and Mr. Emerson sends it to us for illustration and description for the benefit of all:

This machine is propelled by wind, and the noise is created by the ringing of a bell, the rattling of a can, and the clattering of springs on cogs, or what is termed a horse fiddle. It is probably a first cousin to the "Devil's fiddle" which has been found to be such a nuisance in the hands of noisy boys. Referring to the engraving:

The frame, *a*, should be made of pieces $\frac{1}{2}$ inch thick by $2\frac{1}{4}$ inches wide; three pieces should be 12 inches long, the fourth and top piece should extend 3 inches back to insert one of the springs, *g*, into. There should be a cross-bar, *b*, of the same dimension except it be a little wider. In this and the bottom make a hole as near the centre as it will balance well on the spindle of the pole, *c*, the cross-bar being 4 inches from the bottom. The guide-board, *d*, is a thin board, or shingle, morticed into the back upright and should be as long as the frame or 12 inches by 5 or 6 in width.

The spring, *g*, comes in contact with the cogs, and must not bear on them or the wheel, *f*, except when in motion. The fly-wheel, *h*, is added to give momentum and to balance the wind-mill.

The circular can, *i*, is 6 inches in diameter, perforated with several holes lengthwise the sides of the can; also two holes, one in each end of the can in the center, to admit the shaft of the wind-mill; it may be fastened by a pin running through the shaft and soldered to the can. Before closing both ends of the can, put in a few small pebbles or pieces of iron.

The bell, *j*, is hung on a pivot in a slot of the cross-bar. The end of the bell handle should be of tin or other metal, and flat, so that the pin, *k*, may hit it squarely, the pin not being more than two inches each side of the shaft. *L*, is a wire spring to prevent the bell handle swinging so free as to miss the pin when swinging forward.

The shaft, *e*, should be of hickory or other hard wood, $\frac{1}{2}$ inch in thickness to within three inches of the end, to which the springs are attached, which should be one inch. *M* is a separate piece with a hole bored partly through the end, and secured to the end of the shaft by a screw.

The wings of the mill are made by inserting four sticks into a block with beveled pieces of tin tacked to them, as shown in the sketch. At the bearings of the shaft, pieces of lead should be inserted and fastened for the shaft to run in, and in fact it should be made to run with as little friction as possible, and when it runs easy it produces many variations, according to the blasts of wind, and which with the motion of the machine will quite demoralize any of the timid birds that come near.

SWEET-SCENTED FLOWERS.—Many cultivators of ornamental plants desire especially to raise those which produce fragrant odor, particularly for bouquets, stands, and flower-vases. In answer to inquiries, we name the following sweet-scented flowers, to which some of our readers may add others: Sweet violet, hyacinth, heliotrope, pinks, sweet-scented candy-tuft, woodbine, sweet-brier, cabbage-rose, tea-roses, white lily, sweet alyssum, mignonette, sweet pea, carnations, sweet william, and several sweet-scented perpetual roses. Here are enough to fill a room or garden with perfumes rivaling the "odors from the spicy shores of Araby the blest," if well managed and cultivated.

New Publications.

FIRE-SIDE SCIENCE.—A series of Popular Scientific Essays upon subjects connected with every-day life. By James R. Nichols, A. M., M. D., Author of "Chemistry of the Farm and Sea," and Editor of the Boston *Journal of Chemistry*. New York: Hurd & Houghton. Cambridge: Riverside Press.

We have received a copy of the above work from Bancroft & Co. The essays contained in this little volume relate to the science of home life, and the every-day affairs of individuals and families. The author, as editor of the Boston *Journal of Chemistry*, is one of the most successful and instructive writers on popular science in the country. He has a most happy manner of treating ordinarily dry subjects in a way to interest or instruct either the fireside group or those who labor in the field or shop.

It is one of the most encouraging signs of the times that there is a growing demand and taste for really valuable and instructive reading, and he who can render science attractive to the busy working men and women of our country is better than he who taketh a city. The demand of the day is that science should be brought down to the comprehension of the popular mind, and made to minister to the needs and pleasures of the people. To do this it must be divorced from the trappings of technology, and made plain and attractive to the common mind. There is no difficulty in doing this; and he who most successfully leads in this new path of literature is engaged in a noble and most important work for the elevation of the masses. Fire-Side Science should find a place in every home in the land.

POCKET-BOOK OF MECHANICS AND ENGINEERING, containing memoranda of facts and connection of practice and theory; by John W. Nyström, C. E.; eleventh edition. Revised and greatly improved with original matter. J. B. Lippincott & Co., Philadelphia.

This work is the result of study and practice accumulated during the author's professional career, and will be found extremely useful and convenient for engineers in the field. The former editions are familiar to many, who fully appreciate its value. The sources from which the information has been derived are considered to be the highest and best on the various subjects discussed. Dalton on air and heat. Regnault on steam. Kopp on the expansion of water. Morin on friction and strength of materials, and various others of equal authority. The pocket-book of an engineer becomes, after a time, like an old friend, always ready when wanted; but to keep up with the advance of the times new works are required, or new editions of old ones already proven true; and in the latter case it is convenient to have the one we have been accustomed to, as we can more readily refer to any particular subject. A large amount of original matter has been introduced in this edition. The work may be procured of A. Runan & Co., No. 11 Montgomery street, in this city.

Legends of the Yellowstone.

Here, the trappers tell us, is the "mother region" of the gold, where the Indians told Father de Smet it was found on the surface. Here are the burning plains, so testifies Bridger, at the head of the Yellowstone, and large lakes, and boiling springs like the geysers of Iceland. Here he saw his Two Ocean River, which, after flowing for some distance, separates into two large streams—one traveling to the Atlantic, the other to the Pacific. In one of these vales is a large tract of sage brush, every leaf and branch perfect, and here and there are rabbits, sage hens, and even Indians, all turned to solid stone. Ill fares it with whosoever penetrates these mysteries, for the genius of the place at once adds him to the group of statuary. More wonderful still—and our trapper told it with great awe—these bushes bear rare fruit—thousands of rubies, sapphires, diamonds, emeralds large as walnuts. "I tell you, sir," said one voracious narrator to Captain Reynolds, "it is true, for I gathered a quart myself, and sent them down the country." A party of whites were once hotly pursued by Indians, and could only travel by night, when they were aided by the brilliant light shot from a huge diamond in a neighboring mountain, by which they traveled on for three consecutive nights. Here once an old trapper was lost on his road from Fort Laramie to Taos, and wandered for many days; and in drinking from a stream found pieces of yellow metal large as hazel-nuts which he carried to Taos and found to be gold. He spent many years seeking the place again, but in vain. These and many other legends and traditions of these regions the trapper gave us as truths familiar in the mountains as household words, which it would be impious to doubt.—*Lippincott's Mag.*

ARTESIAN well-borers have been unusually successful in this vicinity since the earthquake.

USEFUL INFORMATION.

Another Scientist on Spiritualism.

The celebrated London lawyer, Ed. W. Cox, who was a witness with Dr. Crookes, of the so-called spiritual manifestations, to which allusion was made, with illustrations, in the *Press* a few months since, has lately published a pamphlet, in which he says he has become fully satisfied that intelligent noises or rappings are actually produced in what are called "spiritual manifestations," and that chairs, tables and other objects are undoubtedly moved, and that the proofs of the reality of these demonstrations are just as absolute as are the proofs of any other class of facts in nature.

The force by which these demonstrations are made, he calls "psychic force," as also denominated by Prof. Crookes. Mr. Cox thinks the fact indicative of the existence of a soul within man, and it is the soul which he thinks may exercise psychic force beyond the body. He rejects the idea that the manifestations are produced by the agency of disembodied spirits; and holds that they are purely and wholly the result of forces residing in the human organism. The medium is never able to communicate anything that is not already known to some person present.

This psychic force, Mr. Cox thinks, operates by a vibratory or wave-like action, and is opposed to and capable of overcoming the attraction of gravitation. Tables and other objects that are moved are first filled, so to speak, with the psychic emanation, which renders them buoyant in the air, when they float, swing and sway about as if supported by an invisible balloon.

One of the explanations of these phenomena, and upon which Mr. Cox lays much stress, is the *unconscious cerebral action of the mind of the medium*, which action is manifested through the psychic force. The *Scientific American* in reply to this latter explanation says: "Now as this unconscious cerebral action can be induced and made to set men's bodies in motion, without his knowing it, it becomes a question whether Mr. Cox himself and his friends did not have their cerebrums unconsciously excited so that they could hear noises and see sights that in reality never took place; or so that they could not see the person who pushed the piano, lifted the table, or forced down the balance."

THE WONDERS OF CHEMISTRY.—Chemistry insists that charcoal and the diamond are one; that otter of rose and burning gas count the same atoms in their constitutions; and that the ruby is but iron and clay. In what subtle combination lies the difference between the twins, why C₄H₄ should be a stench in the one and a sweetness in the other, or priceless here and common there, star-eyed Science has not yet explained.

And, after all, it is no more mysterious than that "the limb, the thews, the statute, bulk and big assemblance of a man" should make up indifferently a coward or a hero; here Nero and there Paul; here Newton and there Hodge; here Attila and there Howard.

What spiritual chemistry will ever classify the differences between men in personal power? Faraday and Agassiz come up from the ranks with little help but that of their own wits. Humboldt's only son, heir of wealth and genius, spends most of his life in bed being too lazy to get up. Napoleon the First made an army, and then spun it like a top whether he would. Napoleon the last crumbled an army into a scattering mob, and ran away from it.

TERRA COTTA.—The architects have held a convention in Boston, and among other papers read by the members, one on the use of terra cotta in building is especially deserving of notice. This material is burned clay, mixed with pulverized glass, earthenware, or fossil bones. It was used by the Egyptians, and afterwards by the Greeks and Romans, and later still by the architects of the Middle Ages. The Ninevah statues and tables of terra cotta, with written engravings, remain as sharp and clear as ever. Lately the composition has come into general use for fine buildings in London. A solid block, one foot square, will sustain a weight of eight hundred and eighty-five tons without cracking, and its cost is less than that of stone. Some thought terra cotta lacked certain qualities necessary for trustworthy work. It did not shrink evenly in baking, a great deal of time was required for its preparation, and the blocks were necessarily too small.

CURIOUS FACT.—At a recent sitting of the French Academy of sciences, a curious communication was received from M. Zaliwski, which if it were borne out, would be invaluable to navigation. He states that if a hollow cylinder made of thin material, open at the top and provided with a sharp-edged bottom, be properly ballasted and then put into a tub or other vessel filled with water, it will soon move in a never-varying direction from west to east. The round tin boxes in which concentrated milk is preserved will do perfectly for the experiment, which will become more and more perceptible the oftener the same cylinder is made to do duty in that way.—*Engineer.*

TO IMPROVE GILDING.—Mix a gill of water with two ounces of purified nitre, one ounce of alum, one ounce of common salt; lay this over gilt articles with a brush, and the color will be much improved.

Lubricators.

In selecting, preparing, and applying lubricators, it is necessary to use the utmost care, and see that the lubricator employed is properly adapted to the purposes for which it is to be used, since that which is the very best lubricator for some purposes may prove to be worthless for others. Thus the very expensive and exceedingly delicate oil used by the watch-maker would be of comparatively little value, if applied to heavy machinery, and we need hardly suggest that the converse is equally true. The conditions which chiefly demand our attention in connection, are—1. The nature of the surface to be lubricated; 2. The pressure employed; 3. The temperature to which the machinery is to be exposed, and 4. The method of applying the lubricating material.

Close-grained, hard surfaces, with a fine finish, require a finer lubricator than the surfaces of the opposite kind. In steel spindles with finely polished foot-bearings, working in hard and smooth steps, the finest oil answers admirably. Cast iron of good quality will bear a coarser oil, while, if very open, it may require a soap. The same is true of wood, whether used endwise or longitudinally. For wooden bearings the finest oil is not nearly as good as coarser oil or tallow, while it is very much more expensive. This circumstance is, however, greatly influenced by the amount of pressure to which the surfaces are exposed. Even steel bearings, exposed to great pressure, demand a harder lubricant than where the pressure is light; and where the surfaces are very soft, and the pressure very great, the only lubricant that can be relied upon is plumbago. Ordinary machines pay very little attention to the relation that should subsist between the lubricating material employed and the temperature at which it is used. In Europe this subject has received the most careful thought, and those who will take the trouble to consult the English engineering pocket-books, will find the most explicit directions as to temperature, given in connection with the receipts for preparing lubricators. The necessity of this becomes obvious when we reflect that temperature regulates in a large measure the hardness or softness of oleaginous lubricators; and this hardness should always be carefully adjusted to the conditions in which they are to be used.—*Handicraft.*

LETTER WRITING.—In Russia, the number of letters sent in a year is not quite three to 100 inhabitants, while in England the average is twenty to each person. In the United States, the letters average seven to each inhabitant—a trifle over one-third as many as in Great Britain. This is owing to our vicious and burdensome postal system, and not to the lack of intelligence of our people, as might be argued. A good system, adapted to the wants of the country, would soon make the number of letters greater than in England, as we have more people who can read and write. The whole of Europe averages between five and six letters to each person, both Prussia and France averaging more than the United States, and even Spain half as many.

PATENT FUEL.—"Take three parts of the best Newcastle coal, beaten small, one part of loame, mix these well together into a masse with water, make thereof balls, which you must dry very well. This fire is durable, sweet, not offensive by reason of the smoke or cinder as other coal fires are, beautiful in shape, and not so costly as other fire, burns as well in a chamber as charcoal." The foregoing extract, taken from a fragment of an old book supposed to have been printed about the year 1670 or 1679, and headed, "An Excellent Invention to Make a Fire," contains probably the earliest reference on record to the manufacture of what is now commonly known as patent artificial fuel.

TOO MUCH LEGISLATION.—There is a law in Massachusetts, providing for the inspection of fish, in which all packages of fish are restricted to a weight of 200 pounds. A capitalist of Boston desired to construct tanks in platform cars, and to send them to San Francisco filled with mackerel, bringing them back filled with salmon which are so abundant on the western coast. As the "packages" in this case, however, would weigh two thousand pounds, the enterprise would be illegal, and it was abandoned. State fish inspectors, in the mean time, are making about \$4,000 a year.

A PAINT FOR SMOKE STACKS.—A correspondent of the *Scientific American* gives the following: One pint of good varnish, one pint boiled oil, and red lead sufficient to produce a proper consistency. Prepare it a few hours before wanted, and repeatedly stir while using. Use no turpentine or dryers. I have a stack thus painted which has stood the weather and heat for two years, and remains as when first done, but changing to a darker color. The expense is trifling. This is applicable to any sheet iron which may be subjected to weather or moderate heat.

DURABLE WORK.—One side of a house at Dighton, Mass., has just been reshingled for the first time since the house was built, 77 years ago. A large part of the old shingles are but little worn. They are of Southern cedar, and the nails were all made by hand. The west side of the roof, which is less exposed to storms, will apparently last for many years longer.

One hundred years ago there was only four newspapers printed in America.

GOOD HEALTH.

Needed Sewing Machine Improvement.

It is quite generally agreed among medical men that the injury to health from operating sewing machines, arises more from the anatomical position which the operator is compelled to assume than from the mere labor of propelling the machine. Operators at sewing machines are obliged to sit with their backs entirely unsupported and the knees elevated, thus keeping the spinal muscles constantly stretched, and inducing pain in the back, which is the most constant effect of work of this kind. This irritation is reflected by sympathy to other parts of the system, and general debility ensues. The *Scientific American* says: "We have never seen any satisfactory reason why the tables of sewing machines which are operated by foot power should not be brought up over the lap, so that the operator might sit leaning slightly backward, with the spine thoroughly supported and the limbs extended. We proposed this once to a leading manufacturer, and were told that the notion that women were injured by working on sewing machines had no foundation in fact. We argued that those who had investigated the subject, though claiming that moderate exercise of this sort would not injure, almost unanimously insisted that excess would injure, and added that profitable employment with such machines implied an extent of labor which these authorities claimed to be excessive on machines as at present constructed. We failed, however, to convince him that any improvement in form was desirable or practicable."

Notwithstanding this discouragement, we put our idea to the test of actual trial, and found that all who had been accustomed to work on the old machine, who tried the modified position above described, were unanimous in testifying to the superior comfort and ease secured by it. There may be improvements made in treadles, but these do not reach the root of the evil. It is the position, not the mere labor of propelling the machine, that fatigues the operator.

Those who tried our plan of raising and bringing the table up nearer the person, and placing the treadles farther away, found no difficulty in handling the work or in keeping it properly placed on the table, as the manufacturer above alluded to seemed to apprehend. The whole body was placed in an easy, unconstrained position, and so supported as to rest rather than fatigue the back. We look to see some such change made in the construction of sewing machines. They are so valuable in many departments of industry that invention will not rest till their full utility is developed. The value of an improvement that would enable an operator to work even one hour per day longer than at present, without injurious fatigue, can scarcely be over-estimated."

IN-DOOR LIFE.—One chief respect in which our severe climate and over-stimulating social condition harass us, is the excessive preponderance of in-door activity which they involve. Now man is not yet an in-door animal, though he seems to be in a fair way to become one ultimately. The intense pleasure and the renewed vigor which we feel in summer picknicks may serve to indicate the extent to which our old barbaric needs still assert themselves in our mental and physical constitution. We cannot, however, again become out-door barbarians; nor is it urged that barbaric life is more conducive to health than civilized life. We may nevertheless learn from the savage one all-important hygienic lesson. In innumerable ways the savage violates the laws of health; but he at least breathes pure air, and his blood is rapidly oxygenated. Now one of the worst features, perhaps the very worst, of our in-door activity is the way in which it interferes with the due aeration of our blood. And this is a feature of in-door life which we can and must obviate. Partly due to imperfect science, but still more to unpardonable carelessness of the plainest rules of hygiene, is the unquestioned fact that our houses, our schoolrooms, our theatres, and our public conveyances are, as far as the atmosphere is concerned, foul dens of corruption.—*Ex.*

THROAT AND LUNG DISEASES.—Most of the throat and lung diseases, which indirectly lead to consumption, are occasioned by sheer carelessness. A delicate woman often sits for two or three hours in a crowded theatre or church, breathing an atmosphere tainted by the exhalations from the lungs of hundreds of other people, her system is exhausted, her skin is excited by unwonted action, and when she leaves the building and goes out in the cold air her blood is suddenly driven to the interior of the body, and then ensues a more or less permanent congestion or inflammation of some of the internal organs—usually the air tubes in or leading to the lungs. This process being repeated many times, a chronic bronchitis is finally established in persons otherwise healthy, and life is ever after rendered miserable by this periodical overheating and sudden chilling of the body, even if the more dangerous malady, consumption, does not interfere, and put the abused body into the grave.

PURE VEGETABLE SALVE.—One pound lard, one-half pound rosin; add ten ounces elder bark; boil these over a slow fire half an hour, then strain and put up in small boxes. This sells at 25 cents a box.

WEAKENING OF FATAL MALADIES.—According to M. Alphonse de Candolle, when a fatal malady has seriously affected the younger portion of a population, the succeeding generation, descended from persons who escaped the disease or were but little affected by it, will be found less liable to its attack, as an ordinary effect of the law of descent, this continuing to be the case from generation to generation. This, therefore, constitutes one cause of the weakening of epidemics, and may serve to explain the reason why a disease is most injurious when it first attacks any people, and why it becomes subsequently rarer or less dangerous, as has frequently been observed.

After the lapse of several generations, however, a population moderately affected by a disease approaches the condition of one which has never had it, and an increased intensity may then ensue. Applying these principles to the small pox, M. De Candolle suggests that, at the epoch when Jenner introduced vaccination, the variolic affection had become enfeebled in proportion to the anterior epochs. The vaccination was then more efficacious as applied at this particular period. Small-pox having almost disappeared from Europe for two generations, a new population has sprung up less accustomed to it; and this cause of recrudescence tends now to render vaccination less potent. The author does not pretend that this is the only cause, but that, in connection with others, it exists, and in such a manner as to produce the results specified.

SYMPTOMS OF CATARRH.—Indisposition to exercise, difficulty of thinking or reasoning, or concentrating the mind upon any subject, lassitude, lack of ambition or energy, discharge falling into throat, sometimes profuse, watery, acrid, thick and tenacious mucous, purulent, offensive, etc. In others a dryness, dry, watery, weak or inflamed eyes, ringing in the ears, deafness hawking and coughing to clear the throat, ulcerations, death and decay of bones, scabs from ulcers, constant desire to clear nose and throat, voice altered, nasal twang, offensive breath, impaired or total deprivation of sense of smell and taste, dizziness, mental depression, loss of appetite, indigestion, dyspepsia, enlarged tonsils, tickling cough, difficulty in speaking plainly, general debility, idiocy and insanity.

All the above symptoms are common to the disease in some of its stages or complications, yet thousands of cases annually terminate in consumption or insanity, and end in the grave without ever having manifested one-third of the symptoms above enumerated.

TRANSPLANTING HAIR.—The successful transferring of skin and flesh to assist the recovery of wounds, has induced some one to experiment on hair, and the result is a process of removing portions of the scalp, with the hair on, from some luxuriant head, and planting it on the victim of baldness. A cotemporary points out that it may soon become fashionable to wear hair of various hues and shades, thereby producing the most singular and beautiful effects of color; or the hair might be made to appear white, green, blue, or red, at the owner's option, and by various ways of disposing it. "Take, in due proportions, hair of all the prismatic tints, rumple it, and immediately you have white hair; comb it in another way, and there is your purple, your ultramarine, your yellow, or any possible hue." If these directions are followed, the recognition of the original color of the head may require the use of the spectroscope."

READING IN RAILWAY CARS.—The *Philadelphia Medical and Surgical Reporter* has the following sensible remarks on this subject, and we commend them to the attention of all who ride much by rail: Most, if not all who read on railroads, are sensible of weight and weariness about the eyes. This sensation is accounted for on high medical authority by the fact that the exact distance between the eyes and the paper cannot be maintained. The concussions and oscillations of the train disturb the powers of vision, and any variation, however slight, is met by an effort at accommodation on the part of the eyes. The constant exercise of so delicate an organ of course produces fatigue, and if the practice of railroad reading is persisted in must result in permanent injury. Added to this difficulty is bad or shifting light. The safe and prudent mode is to read little if any. The deliberate finishing of volumes in railway cars is highly detrimental.

FROZEN BEEF ESSENCE.—Dr. H. B. Hare (*Philadelphia Medical Journal*) writes that, in a case of scarlet fever in a child, the patient could not be induced to swallow the beef-tea which his condition required. As he took ice with avidity, the father suggested that if the beef-tea was frozen he might then be induced to take it in that form. The suggestion was carried out, and the child took the frozen beef-tea readily. This expedient may in many cases be advantageously adopted.

If you are caught in a drizzling rain, or fall into the water, by all means keep in motion sufficiently vigorous to prevent the slightest chilly sensation until you reach the house; then change your clothing with great rapidity before a blazing fire, and drink instantly a pint of some hot liquid.

A GOOD LINIMENT.—One of the very best liniments that was ever made for man or beast is composed of equal parts of laudanum, alcohol, and oil-of-wormwood.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 333 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SUBSCRIPTIONS payable in advance—For one year \$4; six months, \$2.50; three months, \$1.25. Clubs of ten names or more \$3 each per annum, \$5, in advance, will pay for 1½ year. Remittances by registered letters or P. O. orders at our risk.

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CLIPPING PAPERS.—To induce further patronage for agricultural papers on this coast, we will hereafter furnish to new subscribers the CALIFORNIA AGRICULTURIST (a \$1.50 monthly), with the PACIFIC RURAL PRESS, for one year for \$4.50. Present subscribers to the RURAL can also receive the AGRICULTURIST for one year by sending us 75 cts. additional to their regular subscription to our paper.

Double Sheet—24 Pages.

SAN FRANCISCO:

Saturday, May 4, 1872.

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Wild Flowers.

Although nearly the whole list of California wild flowers are entirely odorless and single petaled, in distinction from double flowers, the result of cultivation, yet there are very many of rare beauty; exquisite from their very singleness and simplicity of form and height of coloring; they would, if growing by the side of their more gaudy, double-sisterhood of cultivated flowers, cause a blush—if flowers can blush—upon their flouncing petals.

May pic-nic-ers from the cities to the country can attest the beauty of the wild flowers, as worthy the attention, love and fun of picking them; and very many, year by year return to city homes from these excursions, fully determined that another year they will have these wild beauties growing in their own gardens. And nothing would be easier if it were possible to obtain the seed. But in this lies the difficulty. The seeds are not ripened till mid-summer or autumn, and then all is dried and withered; and with the lost beauty of the flower goes all thought of its possession as a garden adornment. And thus we go on from year to year, renewing our admiration of them with every returning spring-time, only to be again forgotten. And yet with all our neglect and forgetfulness, the beautiful wild flowers come again, conducing to our happiness and pleasure because the Giver of flowers will have it so. We ought to love flowers, if only in gratitude to the great Giver who, though wholly unsolicited, annually renews the charming gift.

Lecture Before the Oakland Farming, H. & I. Club.

Prof. E. S. Carr, of the State University, will give a lecture, with experiments, on "The Organic Constituents of Plants," before the Oakland Farming, Horticultural and Industrial Club, on Friday evening, May 3d, at the Chemical Lecture Room of the University, corner of 12th and Franklin Streets, Oakland. The lecture is free. Gas fixtures have recently been introduced into the Lecture Room, which is conveniently located for experiments, adjoining the Laboratory. Ladies and gentlemen from all parts of the county are invited.

LOS ANGELES ORANGE CROP.—About five-sixths of the orange crop of 1871-2 have been shipped to San Francisco thus far. The crops stated by competent judges to be about five times as large as last Winter's crop, and that the portion already shipped is estimated at 24,000 boxes, or about 5,000,000 oranges. The most inferior lots brought \$7 per 1,000, the average bringing between \$20 and \$30. Some extra fine sold as high as \$35.

The Orange Crop.

It will not be but few years before the bearing orange trees of California can be counted by hundreds of thousands. There are those, who have closely watched the progress of the orange culture—that seems to be almost a mania with California fruit growers at the present time—who believe that the time is not distant, when we shall find that, like many other enterprises in which Americans are wont to engage in, when once they take a start that way, is destined to be entirely overdone, and that after having spent 8 or 9 years in bringing their orange orchards into bearing, will find their fruit a positive drug in the markets.

We advance it as an axiom, a self-evident proposition, that the growing of good fruit in any country suited to its production, will always be a profitable business, and worthy the attention of agriculturists. In the Atlantic States, where for the last 20 years particular attention has been given to the growth of fruits, the demand is better now than ever before. It has been shown however that to succeed as a fruit grower, none but the best fruits should be produced. These are always saleable, while inferior sorts are not worth the care bestowed upon their cultivation; and as it is just as easy to raise a good variety as a poor one, fruit growers should give the quality of their fruits—obtained by securing the best sorts, and the best of culture—their first and last attention.

This care should be given particularly to the orange; there are certain sorts, distinct varieties, entirely superior to others; these should be obtained at any cost and all the usual inferior sorts discarded; then, as the orange bears transportation largely better than apples, pears or any of the crispy fleshed fruits, they can be sent in unlimited quantities to the vast interior of our continent at highly remunerative prices. The question will not be—where can I get the most and the cheapest oranges for the interior markets, but, where can I get the best?

Perfumery Resources of California.

An Eastern merchant, largely interested in the importation of fine and expensive oils, and choice perfumeries, visited Southern California about two years since, and in a letter to the New York *Daily Globe* said: "This portion of the Pacific coast is naturally suited to the growth of flowers; from its native capabilities it ought to be the centre of perfume and oil manufacture and trade. The choicest material for expensive oils is wasted here to the amount of thousands of dollars during the season." This branch of California's resources has often been commented upon by the tourist, but no one has yet attempted to engage in the business. No doubt the time is not far distant when the choice varieties of blossoms that are native and prolific to this climate and soil, will form the material for a large manufacturing business, and result in a steady resource of wealth to the manufacturers.

Orange-Flowers, Etc.

One of the chief productions of Southern California is the orange. It thrives wondrously there, and is already one of the features of trade in that section. Los Angeles oranges possess sweeter and richer flavor than the Tahiti oranges, and command a better price in San Francisco markets. The peel of the Los Angeles orange is thicker, sweeter and tenderer, containing more oil than any other orange in the Pacific markets. The distiller would in time find the orange groves of California a productive field for material.

From reliable authority we find and refer to a few facts connected with the orange waters and the manufacturers of the same. Two distinct odors are procured from the orange blossom varying according to the different methods used for its distillation and production. To the manufacturer this difference of perfume from the same flower is a great advantage, and is a fact worthy of investigation by the chemical philosopher. Doubtless this peculiarity belongs to all fruit blossoms.

When orange flowers are distilled with water we obtain the otto of the blossom, which is known as the Oil of Neroli; this Neroli produced from the *citrus aurantium*, is considered the finest quality. The next quality is from the Seville orange, called "bigaradid," this and the "neroli petale" are used to an enormous extent in the manufacture of "Eau de Cologne," and other choice perfumes.

Essence of orange, or, as it is called, "Essence

of Portugal," is obtained from the peel of the fruit, and is produced by distillation. The peel is rasped in order to break the sacs that hold the otto; this otto will ignite with a brilliant combustion. It is used universally in perfumery, and is the main ingredient in Lisbon water. The Los Angeles orange contains more otto in its sacs than the Isthmus or Tahiti orange. Experts in perfumery manufacturing say that nowhere in the world are there better facilities for this trade than is offered in Southern California.

There is also a constantly increasing demand for perfumery, made by the soap, cream, pomade and oil manufacturers. All absorbent powders require delicate and expensive flavors. The citrou-lemon of California possesses a delicious perfume, and the oil is even superior in every particular to the orange.

The almond flourishes in lower California better than in other climates, and the value of its oil, and the universal use of its perfume, is too well known to be repeated. Of the flowers we particularly observe the heliotrope and the rose; the flowers bloom heavily, and are more heavily charged with odors than those of more northern growth. If the floral varieties necessary for oil and perfumery manufacturing purposes were cultivated and grown in view of such supply and demand, the results in Southern California would astonish the world. The only attention given now is to door-yard growths and ornament; but if hundreds of those rich acres were given to flower-planting for commercial purposes, we might challenge the world to vie with us in the production and value of the same.

The quantity of otto yielded by one or more of such plants as are native to Los Angeles may be given here for the purpose of showing what value could be placed on the same if manufactured at home:

Orange peel, 10 lbs. yield, of otto.....	1 oz.
Almond, 14 " " " " " " " " " "	1 oz.
Geranium leaves, 100 lbs. " " " " " "	2 oz.
Peppermint (herb), 100 lbs. " " " " " "	4 oz.
Lavender flowers, 100 lbs. " " " " " "	30 oz.

This is a list of only a few plants, but sufficient to show the product of each variety. The otto of lavender is now manufactured or produced almost exclusively by the French. Turkey, Hindostan, Africa and England produce the majority of our essence and handkerchief perfumes. Tonguin furnishes the musk.

Lavender, jasmine, orange and rose are the leading combinations of commercial perfumes and waters.

Quince Culture.

A correspondent wishes us to inform him why his quinces are always the least perfect of any fruit in his garden or orchard, and yet the soil and cultivation are the same; that in fact he has taken more pains to enrich the soil around his quinces than any other fruit tree and still his quinces are inferior.

We can only suggest, that perhaps the soil is too dry for the successful growing of the quince and that summer irrigation would be of benefit. The natural habitat of the quince is near the ocean shore and the growth of naturally moist, though not wet lands. Many are of the opinion that it always succeeds best in wet, springy land or along the banks of rivulets. Such positions are not essential to the growing of abundant crops of fine fruit; but moist lands are better than dry.

In the vicinity of Bodega in this State is found an excellent soil for the quince as attested by the quality of the fruit. Climate may have something to do in producing the excellent quinces of that locality. The moist ocean breeze seems to favor a fuller development, than apparently the same soils further inland.

Our correspondent may find advantage in giving to the soil around his quince bushes or trees, a liberal top-dressing of coarse salt, raked in and mixed with an inch or more of the surface soil. Salt seems to act not only as a special manure adapted to the quince, as bone-dust is to the pear, but it serves to attract the moisture of the atmosphere, keeping the soil in the best possible condition of dampness even in dry weather, and is destructive alike of weeds and insects.

CHEERING.—From all parts of the State the most cheering reports are received of the present condition of the grain crops, both early and late sown; and with but a moderate shower or two previous to the 15th, no better crops than will be produced could well be asked for.

State Agricultural Society's Premium List and Rules.

In our advertising columns, this week, will be found the premium list in full of the State Agricultural Society, as revised and adopted for the Fair of 1872, which commences on the 19th of September, and continues ten days.

All contestants for premiums must become members of the Society. Membership costs five dollars and will admit the member and his wife and minor children to all the exhibitions and privileges of the Society for one year. Single admission to the Stock ground including the Grand Stand, one dollar—to the Pavilion, fifty cents.

All animals and articles must be entered on the Secretary's books by 12 o'clock A. M., of the 19th of September; none will be received on any consideration later than the 21st. The Board will take good care of all articles placed on exhibition, but will not be responsible for the same or for any expense of removing to or from the Fair. Hay and straw will be furnished all animals on exhibition free, but no grain except for chickens and swine. Animals or articles may be sold during the fair, but cannot be removed until the close of the same without special permit from the proper authority.

Any person not a member of the Society may have articles of merit placed on exhibition, free of cost, provided they are not placed in competition for premiums. All machines, implements or other mechanical product, must be exhibited by their respective makers or inventors or improvers or assigns to or for whom only premiums for such articles will be awarded.

We would suggest to our patrons in California particularly, the preservation of this number of the RURAL, with premium list, for future reference.

We shall take occasion to speak of the more prominent features of the premium list from time to time in future numbers.

We Commend the Pleasures of the Glass.

The cost of a pocket magnifying glass is but trifling, yet its possession is almost invaluable as a source of pleasure and instruction. If, while walking in the garden or the field, we apply its power to the leaf, the fruit, the flower, or the form of the minutest insect life, it brings out the wonders of creative skill, of adaptation of means to ends, marvelous ingenuity and complications of wisdom, of which we had previously no knowledge or conception.

Nor is it necessary that we confine its use to living vegetable or animal forms, but take the broken crystal, the grain of sand, the snowflake or the frost upon the window-pane, and these see through the glass as an aid to observation, will teach us lessons teeming with wonder and delight. To our young readers particularly we commend the pleasures of the glass; carry it in your pocket, apply it to whatever of interest or curiosity you meet with, animate or inanimate; the budding leaf, the opening petal, insects emerging from their wondrously formed habitation, the wing of the bee or the butterfly, in fact everything upon which you can bring your glass to bear and which you can take time to examine, and it will increase your knowledge, multiply your sources of intelligent recreation and imbue your mind with larger and more exalted conceptions of the power and wisdom of the Almighty.

The Useful and Beautiful.

There are really two ways to do a thing well. The one studies utility and economy without any regard to how it will look. The other includes both, and in addition, the doer is often influenced by taste, giving the preference ever to that way of doing a thing, which shall most directly promote the beautiful in union with the useful. Taste displays itself in the selection of the site for building, the plan and style of architecture, planting trees, making fences, laying out grounds, the color of buildings, etc. Some in these display taste; others seem to show an utter want of, or disregard of it, everything seeming to be done with reference only to the most short-sighted utility.

Attention to matters of the kind mentioned, would soon produce a favorable change in all our rural regions. Much has indeed been already done, toward the bringing about of this desirable change, but much more can be done. What we would say then is,—let every farmer study to make his home as beautiful and attractive, as his farm is useful and productive.

Improvement on Railroads.

We present herewith the illustration of an improvement in the construction of railroads, invented and patented by John L. Boone, of this city, through the SCIENTIFIC PRESS Patent Agency. The invention consists, first, in an improved material for manufacturing railroad ties, and secondly, in an improvement in the construction of the tie itself, by which a greatly improved road-bed is produced.

The first part consists in forming railroad ties of any animal or vegetable fibre, cemented together with asphaltum, and subjected to the necessary pressure in moulds, to form, as it were, an artificial wooden block, of the proper size and shape. This block, it is claimed, will be, to a certain extent, elastic, at least as much so as wood, while being composed of fibre locked up in asphaltum, it will not decay or deteriorate with age like wood. It is also claimed that spikes driven into the block, will be retained with much more tenacity than in wood; thus at once giving two invaluable requisites for a tie. The materials of which the block is composed can be cheaply and readily obtained in all parts of the world, and the tie is easily manufactured in quantity, which is another indispensable requisite for a manufacture so generally required.

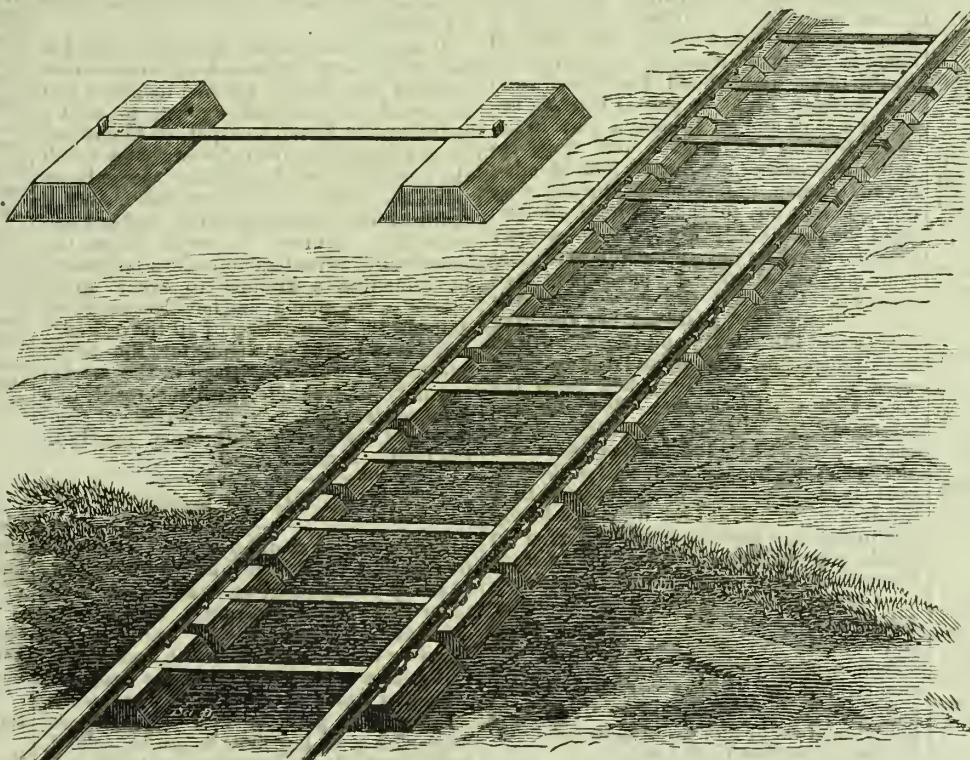
The construction of the tie is plainly shown in the engraving. Two short blocks of the material, say two feet long, by ten inches square, are united together by an iron rod, the ends of which lie in a recess in the block, so as to pass beneath the rail. The ends of these rods are then turned up so as to hook over the outside flange of the rail. The blocks are parallel with each other, so as to form a continuous foundation or bed for the rail. In constructing the track, the ties or blocks are placed closely together, so as to form two side stringers, upon which the rails are spiked, so as to bind the blocks together longitudinally, while the transverse tie rods prevents them from being displaced sideways. By placing the blocks close together so as to form a continuous foundation for the rail, the inventor claims that he avoids the springing of the rails between the ordinary transverse ties, as the trains pass over it. Our readers will recollect the up and down motion of a train of cars, when moving upon an ordinary track, and how it loses this movement when it is running over a bridge, or other continuous foundation. This movement is caused by the yielding of the rails beneath the wheels, as they pass from tie to tie, and is necessarily destructive, to both the track, and rolling stock of the road, besides being unpleasant to the passengers. By constructing the foundation in a continuous line, this is avoided, and a smooth easy movement given to the train. In cold countries, the rails are frequently broken by a passing train, after a cold or frosty spell of weather, and much damage frequently occurs thereby. This is also avoided by this construction.

The fibre being compressed together in a heterogeneous mass, the block will have no grain like wood, and will not, therefore, split; rendering it capable of holding the spikes with extraordinary tenacity, thus ensuring the permanency of the fastenings.

There are already constructed in the United States over 60,000 miles of railroad, and its extent is being increased at the rate of several thousand miles yearly. In every mile of this road the number of ties required is about 2,640, making an aggregate of 158,400,000 ties required on the road already constructed. Supposing these ties to be renewed every four years, it will require 39,600,000 ties per year. We build annually 7,000 miles of new road, requiring 18,480,000 ties, which, added to the annual requirement above mentioned, gives 58,080,000 ties to be furnished every year. Now, if we calculate the average cost of each tie at forty cents, we have a total of \$23,232,000 as the annual cost of ties, in the United States alone. This is no fancy picture, but actual facts based upon correct calculation. It is certainly high time that some substitute for wooden ties be introduced, or we shall shortly find ourselves without sufficient timber to keep up our long lines of railroad. Even now in thickly settled portions of our country there is beginning to be a scarcity of timber suitable for railroad ties,

and the ties begin to command a high price; yet we have but just begun to build railroads. Before many years every town and hamlet in the country will have its branch lines, and our land will be a net work of iron bands. Now is the time to begin to introduce some more proper and inexhaustible material for the ties, in order that we may save our timber without further depletion. It is merely a question of time, as sooner or later our railroad engineers will have to look about them for material with which to construct the foundations of their roads. Iron ties are being introduced into India, and we hear of various experiments in that direction elsewhere; but iron, like wood, is not inexhaustible, and its high price and want of the proper elasticity is against it.

The tie above described can be manufactured very cheaply, costing but little, if any more, than wood. The materials of which it is manufactured are practically inexhaustible. Fibre suitable for this purpose grows everywhere, on the prairie, in the swamp, upon all soils and in all climates. It can be obtained for the simple cost of collecting it. Asphaltum is found in immense quantities in the United States, Eu-



BOONE'S PATENT RAILROAD TIE.

rope and other parts of the world. But a small proportion of asphaltum will be required in the manufacture of the blocks, its only use being for cohesive and preservative purposes. The blocks can be readily transported to the place where they are required for use without occupying unnecessary space.

This invention has been assigned by the inventor to himself and Rudolph Herman, of this city, and application has been made for foreign patents. These parties intend to use every exertion to have their system of tying railroads, practically tested in this State, and thus introduce a new enterprise and manufacture upon our coast. We wish them success.

One Mistake.

We heard it remarked the other day when the wind was blowing from the north, and lapping up the moisture and baking the surface of the earth, almost ruining the late sown grain, and seriously jeopardizing much of the early sown grain, that Governor Booth made one mistake during the session of the Legislature in failing to sign the Forest Bill. Although this bill was not what we would have suggested for the encouragement of forest culture, yet we could but feel the force of the remark.

We must grow forests in this country if we would have a more even and reliable climate, and consequently more certain and uniform crops. Too small a portion of the surface of this State is covered by forest trees, and that portion is annually growing less. Until we inaugurate a system by which the forests of the State shall be increased we may expect not only damaging north winds, but extremes of drouth and wet. Our law-making authorities give too little attention to the material interests of the country. There is not philosophy enough in one law book.

Artesian Wells in Nevada.

Hon. C. W. Kendall, member of Congress for Nevada, has introduced into the House of Representatives, a bill to encourage the sinking of artesian wells upon the public lands in the State of Nevada, and supported it with a very interesting speech showing the general utility of such wells and their special application to the Great American Basin, near the center of which the State of Nevada is located. We think there can be no question as to the feasibility of a general system of irrigation being established for that region by the sinking of such wells. The country is almost destitute of rivers, at least to such an extent as to render any extensive cultivation impossible by any other means than the one suggested.

The "encouragement" asked for is simply a fee to a certain extent of land adjoining any wells which may be sunk to a depth which will yield a sufficient quantity of water for their irrigation. The amount of land to be donated is left blank in the bill, to be filled up as it may be deemed advisable from suggestions and facts which may be brought out in the

The Resources of California.

The above is the title of a paper published in San Francisco by Jno. P. H. Wentworth & Co. It is issued periodically, and is to a considerable extent a complete compilation from all the papers of the State, of such items and facts, as relate to its vast and unequalled resources, agricultural, mining, mechanical and commercial, with the present condition of these and other interests connected with the State's welfare and important to the immigrant or inquirer seeking information.

It informs the reader in regard to vacant government lands, as homes for poor men, that there is room for all; of our rich valleys and their attractions for settlers, of climates and crops; of the culture of the semi-tropical fruits, orange, lemon, fig, raisins, banana and the olive. The fruits generally and their peculiar adaptation to certain localities throughout the State. Of sugar beets and the manufacture of sugar therefrom; of the culture of cotton, the ramie and silk, with the peculiar adaptation of climate to these productions. Of the reclaimed swamp or tule lands, all about irrigation and artesian wells.

It speaks of our gold-bearing gravel beds, quicksilver mines, coal, coal-oil and marble, and indeed much more that it is impossible for us to enumerate. But speaks especially of labor and capital, and the cost of living in California and its educational facilities. Information for immigrants. How to get to California. Cost of passage by different routes; time occupied, etc. In fact a perfect compendium of interesting and valuable information to all, but particularly to the immigrant seeking a home in a genial and inviting climate and country.

It is also an exponent of the California Immigrant Union—an organization for the purpose of encouraging immigration to California, the principal office of which is at No. 316 California street, San Francisco. It gives to immigrants and others reliable information in reference to public or private lands in California, and the mode of acquiring them. Persons in the Eastern States or Europe desiring to purchase lands or to form colonies and settle in California, by writing to the California Immigrant Union, No. 316 California street, San Francisco, can obtain, gratis, such information as they desire; but send at once and without delay, to same address for *The Resources of California*, which will be mailed free.

How to Kill Ants.

EDITORS PRESS.—Will you please give us through your paper, the PACIFIC RURAL PRESS, a receipt to kill or drive away ants—large ants, not the small kind—they live in the trees, and we cannot get rid of them. W. H. G. Pilot Hill, El Dorado Co.

We know of no complete extirpator of the common black ant, which is so frequently the pest of certain localities. They can be kept from trees if it is any object to do so, by encircling the trunks closely with a band of twisted cloth, or narrow belt, and keeping the same partially saturated with kerosene or coal oil, or the cheap coal tar of the gas factories.

But with many it is a question whether ants do any harm to trees; some contending that they only ascend to prey upon lice or other minute parasites that infest the tree, and not upon the leaf or buds at all. Ants can be caught in large numbers by saturating a sponge with any sweet liquid of which they are fond, or shaking powdered sugar into the sponge, allowing them to enter every pore till it swarms with them, and then throwing sponge and ants into boiling water; but this is only a partial remedy for the evil. We can only say, make them as uncomfortable as possible in all their places of transit as you can by the free use of coal tar, and the hope would be that they would soon abandon the premises.

FACTS ABOUT WOOL.—We would direct the attention of the reader to our remarks on the present prospect of wool values, on our first page.

GREEN GOOSEBERRIES.—This fruit in good conditions for pies, is coming in freely, and selling at ten cents per pound.

If every man would reform himself, the world's reformation would be completed and philosophers would be needless.

course of debate and consideration of the bill, previous to its final passage in the House. We certainly can see no reasonable objection to the passage of such a bill, provided no more land is taken than any given well can properly irrigate. The land is generally worthless without such wells, and as the government does not propose to go into the business of well digging, it had better give a little to any one who will give a value to the land, and thus add to the taxable property of the country.

With regard to the amount of land which should be granted to each well, the Humboldt Register says:—"This is not an easy question to answer. If the estimated cost of each well is \$5,000, then it would require a grant of six sections of land to cover the cost; estimating the land at Government price. Then again, it is believed that a well flowing twenty inches of water, miner's measurement, would not be sufficient to irrigate more than 100 acres, while some ranchmen say that 20 inches of water will not more than sufficiently irrigate 80 acres. As 160 acres in all probability, will be all that can be irrigated by one well, we would suggest that amount as the size of the grant. It will make no material difference, whether the grant is for 160 or 640 acres, as a well would have to be sunk on each quarter section to make the land of any value. The land, without irrigating is of no value whatever, and it will be a wise act on the part of the Government to give all such land to settlers who will undertake to reclaim it."

CHERRIES.—The first cherries of the season were received on Wednesday, of this week, from Briggs Brothers, of Marysville, and sold for \$1.75 per pound. Two other small lots were received on Thursday, from Isaac Bryan, Sacramento river, and Cumberson, of Marysville, and sold for \$1 per pound.



The Village Store.

He was only a clerk in a village store,
Where all was sold, and a little more—
Pins and pipes, and tea and nails,
Sugar and ribbons, and flannel and pails,
Boots and butter, and tops and tape,
Whiting and blacking, molasses and grape,
And strings of onions, and pens and ink.
And, out of a demijohn, something to drink!
'Twas the grand exchange of scandal and news,
And a wonderful place to cure the blues;
For there, from morn till after ten,
You'd generally find the leading men—
The men who held official station,
(You'd think, indeed, they ruled the nation)
Deacon Dodd and Father Hobb,
And queer old uncle Nathan Cobb.
You'd see them all some frosty night,
When snow is crisp and stars are bright,
As round the red-hot stove they sit,
And smoke and chew, and talk and spit,
And spin their yarns of this and that,
From Dobbs' farm to Cobbs' Cat.

How to Commence Business.

There are many young men who are in the habit of excusing their idleness and inefficiency with the plea that they can do nothing without capital. The lack of means is the ready reply they make to every appeal to action. The imagine that they possess in themselves all the prerequisites to success except capital. If they only had capital, in addition to their other *imagined virtues*, they would do great things in the world; would grow and astonish the natives with the boldness of their enterprise. They would become rich and lay the world under perpetual obligations to them by the magnificence of their benefactions. This is the way they think and talk, and they roll the vain-glorious idea over in their minds until they come to imagine that the world is an immense loser by their poverty.

These persons forget one important fact that all capital is the product of labor. That nearly all rich men in this country were once poor. That nearly every personal fortune they can enumerate is either the product of its owner's toil and skill, or the representative of his father's toil and skill.

How did the makers of these fortunes get along without capital? Had they spent the vigor of their youth in idle and foolish lamentations over their poverty, they would have lived and died poor, and left nothing but an inheritance of honesty behind them. Capital allied to labor and skill can work wonders in the war of material enterprises. But money is not the only indispensable thing to young men. There are other kinds of capital besides accumulated money, brains, muscle, industry, honesty, diligence, truth, fidelity, skill, tact, education—all these are capital, and all of them have a commercial value, which the owner will be able, sooner or later, to command in the market. Provided with these, any young man in this country may make more than he needs to spend every year and thus have something at the end of each year to invest as money capital. If he needs money let him go to work and make it, and thus give proof of his ability to use it profitably and judiciously. If we go into any great city, or into any prosperous agricultural district, we find the capitalists are those who have made their fortunes without any outside aid. They did not waste their time in repining at their poverty, and in silly dreams of what they could do if they had the money to do it with. They went boldly and resolutely to work; they toiled and thought and planned and kept toiling and thinking and planning, patiently, until, at last they grasped the fortunate moment, and succeeded.—*Exchange.*

HUSBAND AND WIFE.—Preserve sacredly the privacies of your house, your marriage state and your hearts. Let not father or mother, brother or sister, nor any third person presume to come in between you two, to share the joys or sorrows that belong to yourselves alone, to you two. With God's help build your own quiet world, not allowing the dearest earthly friend to be the confident of aught that concerns your domestic peace. Let moments of alienation (if they occur) be healed and forgotten at once. Never, no never speak of

it outside, but each to the other confess and all will come right. Never let the morrow's sun find you still at variance. Renew or review the vow at every temptation, it will do you both good. And thereby your souls will grow together, cemented in that love which is stronger than death, and you will become truly one. Thus do I pray for every married pair.—*A Wife of Forty Years.*

Life's Brightest Hour.

Not long since I met a gentleman who is assessed for more than a million. Silver was in his hair, care upon his brow, and he stooped beneath his burden of wealth. We were speaking of that period of life when we had realized the most perfect enjoyment, or rather, when we had found the happiness nearest to be unalloyed. "I will tell you," said the millionaire, "when was the happiest hour of my life. At the age of twenty-one I had saved up \$800. I was earning \$500 a year, and my father did not take it from me, only requiring that I should pay for my board. At the age of twenty-two I had secured a pretty cottage, just outside of the city. I was able to pay two-thirds of the money down, and, also to furnish it respectably. I was married on Sunday—a Sunday in June—at my father's house. My wife had come to me poor in purse, but rich in the wealth of her womanhood. The Sabbath and the Sabbath night we passed beneath my father's roof, and on Monday I went to my work, leaving my mother and sister to help in preparing my home. On Monday evening, when the labors of the day were done, I went not to the paternal shelter, as in the past, but to my own house—my own home. The holy atmosphere of that hour seems to surround me even now in memory. I opened the door of my cottage and entered. I laid my hat upon the little stand in the hall, and passed on into the kitchen—our kitchen and dining-room were all one then. I pushed open the door and was in—heaven. The table was set against the wall—the evening meal was ready—prepared by the hands of her who had come to be my helpmeet in deed as well as in name—and by the table with a throbbing, expectant look upon her lovely and loving face stood my wife. I tried to speak, and could not. I could only clasp the waiting angel to my bosom, thus showing to her the ecstatic burden of my heart. The years have passed—long, long years and worldly wealth has honored and flowed in upon me, and I am honored and envied; but—as true as heaven—I would give it all—every dollar—for the joy of the hour of that June evening in the long, long ago?"—*New York Ledger.*

RELIGIOUS VALUE OF FLOWERS.—The Bible, the most valuable of all books, speaks of the Rose of Sharon and the Lily of the Valley. Christ pointed to the latter for the purpose of illustrating and enforcing truth. The poet feels the inspiration of flowers, and employs them as rich materials. One speaks of never-fading flowers that smile upon the everlasting fields of Paradise, and another of the shady rills of Sharon, where the lily and rose contribute with their beauty and fragrance to the happiness of the devout. Their influence on the health and happiness of families, where cultivated, is proverbial. Were I to picture to myself a happy family, I would place all, parents and children, around an altar of devotion, where each one present was clad with the beauty of holiness, and took delight in cultivating a meek and quiet spirit; and as we always feel an inward influence corresponding with outward circumstances, I would have home beautified with walks and flowers, where parents and children could take recreation together, and drink in the inspiration of all that is beautiful. This would tend to the refinement of the sensibilities and purity of the moral feelings. Absolutely, we must surround ourselves with things beautiful and agreeable, or sink to a kind of heathenism. No duty is more pleasant than that of aiding such as seek assistance in the promotion of the happiness of their homes. Beauty and virtue always go together.

DREARY HOMES.—Of all the dreary places, deliver us from the dreary farm houses which so many people call "home." Bars for a front gate; chickens wallowing before the door; pig pens elbowing the house in the rear; scraggy trees never cared for, or no trees at all; no flowering shrubs, no neatness, no trimness. And yet a lawn, and trees, and a neat walk, and a pleasant porch, and a plain fence around, all do not cost a great deal. They can be secured little by little, at odd times, and the expense hardly felt. And if ever the time comes when it is best to sell the farm, fifty dollars so invested will often bring back five hundred. For a man is a brute who will not insensibly yield to a higher price for such a farm when he thinks of the pleasant surroundings it offers his wife and children.

Educating Girls.

Educating girls for household duties ought to be considered as necessary as instruction in reading, writing, and arithmetic, and quite as universal. We are in our houses more than half of our existence, and it is the household surroundings which affect most largely the happiness or misery of domestic life. If the wife knows how to "keep house," if she understands how to "set a table," if she has learned how things ought to be cooked, how beds should be made, how carpets should be swept, how furniture should be dusted, how the clothes should be repaired, and turned, and altered, and renovated; if she knows how purchases can be made to the best advantage, and understands the laying in of provisions, how to make them go farthest and last longest; if she appreciates the importance of system, order, tidiness, and the quiet management of children and servants, then she knows how to make a little heaven of home—how to win her children from the street; how to keep her husband from the club-house, the gaming-table and the wine-cup. Such a family will be trained to social respectability, to business success, and to efficiency and usefulness in whatever position may be allotted to them.

It may be safe to say that not one girl in ten in our large towns and cities enters into married life who has learned to bake a loaf of bread, to purchase a roast, to dust a painting—to sweep a carpet, or to cut and fit and make her own dress. How much the perfect knowledge of these things bears upon the thrift, the comfort and health of families, may be conjectured, but not calculated by figures. It would be an immeasurable advantage to make a beginning by attaching a kitchen to every girl's school in the nation, and have lessons given daily in the preparation of all the ordinary articles of food and drink for the table; and how to purchase them in the market to the best advantage, with the result of a large saving of money, an increase of comfort, and higher health in every family in the land.—*Hall's Journal.*

What Will He Become?

This question is often asked by parents in regard to their sons, and by the friends of many young men; and, although there is no rule for ascertaining, we may get some idea of what a young man will be come by observing his actions and works.

Solomon said, many centuries ago, that "even a child is known by his work, whether it be good or evil." Therefore, when you see a boy slow to go to school, indifferent about learning, and glad of every opportunity to neglect his lessons, you may take it for granted that he will be a blockhead.

When you see a boy anxious to spend money, and who spends every cent as soon as he gets it, you may know that he will be a spendthrift.

When you see a boy hoarding up his pennies, and unwilling to part with them for any good purpose, you may set it down that he will be a miser.

When you see a boy willing to taste strong drink, you may rightly suppose that he will become a drunkard.

When a boy is disrespectful to his parents, disobedient to his teacher, and unkind to his friends and playmates, it is a sign that he will never be of much account.

When you see a boy looking out for himself, and unwilling to share good things with others, it is a sign that he will grow up a selfish man.

Manners.

Before you bow to a lady in the street, permit her to decide whether you may do so or not, by at least a look of recognition.

"Excuse my gloves" is an unnecessary apology, for the gloves should not be withdrawn to shake hands.

When your companion bows to a lady, you should do so also. When a gentleman bows to a lady in your company, always bow to him in return.

A letter must be answered, unless you wish to intimate to the writer that he or his subject are beneath your notice.

A visit must be returned in like manner, even though no intimacy is intended.

A smiling countenance is pleasant, but excess of laughter should be avoided, especially when it is possible for any one to suppose himself deceived by it.

Whispering in company is always offensive and often for the reason that persons present suspect that they are the object of it.

Young Folks' Column.

Fourteen American Girls.

It will be remembered that about one year ago fourteen American girls, from all parts of the Union, started out from New York, with a lady named Mrs. Stone at their head, and a courier named Gilbert, who completed the party. Their object was to see things as they really existed, and not to 'take everybody's word for it.' They first visited Ireland, not going in the conventional way, but mingling with the people, from whom they received every hospitality, as it might be expected such a bevy travelling in such an unique fashion would. They then extended their patronage to Scotland, England, France, Switzerland, Germany and Italy, in the same way, romped over the Alps, and enjoyed everything without the trammels of society upon them. Now they are travelling in the East, and meeting with all sorts of pleasant adventures. In Egypt they met the Emperor of Brazil, and desiring his autograph, he kindly gave them each a photograph of himself fully endorsed. When they visited the pyramids, a photographer was employed in taking a negative of Don Pedro, with the mammoth mausoleums in the background. The lovely group was consequently taken at the same time, and the Emperor declared that he could wish nothing to remain immortal except a picture which had fixed him in the company of such a charming circle—not even the pyramids themselves. Whereupon the acquaintance was renewed, and each young lady was declared a natural princess. A week ago, the party, accompanied by a dragoon, sailed from the port for Beyrout, where they will go overland to visit the Savior's tomb. While at Cairo they received distinguished courtesies from Counsel-General Butler. Now they are bound for Constantinople, intending to come home when they get ready.

When the Dark Comes.

A little girl sat, at twilight, in her sick mother's room, busily thinking. All day she had been full of fun and noise, and had many times worried her poor tired mother.

"Ma," said the little girl, "what do you suppose makes me get over my mischief, and begin to act good, just about this time every night?"

"I do not know, dear. Can you not tell?"

"Well, I guess it is because this is *when the dark comes*. You know I am a little afraid of that. And then, ma, I begin to think of all the naughty things I've done to grieve you, and that perhaps you might die before morning; and so I begin to act good."

"Oh!" thought I, "how many of us wait till '*the dark comes*,' in the form of sickness or sorrow, or trouble of some kind, before we 'begin to act good!' How much better to be good while we are enjoying life's bright sunshine! and then, 'when the dark comes,'—we shall be ready to meet it without fear."—*Wellspring.*

Rules for Dolls.

A wooden-headed doll should be careful not to hit her head against her mamma's lest she should break it.

A doll should try to keep away from the rockers, as the rocking-chair may break loose and crush her. A crushed doll never regains her spirits.

A wax doll should avoid the fire, if she wishes to preserve a good complexion.

A rag doll should try in every way to improve her mind. Knowledge is worth more than beauty.

Often an old doll with a cracked head and a sweet smile is more beloved than a new doll with a sour face.

A doll should never be proud; for what is she, after all, but a doll? Also a doll should never be jealous when she sees another doll more finely dressed. Looks are nothing; behavior is all.

It is a bad plan for dolls to be stretched out on the floor too often, as stupid and heartless people are apt to tread on them. A doll that is trodden on is sure to go into a decline.—*The Nursery.*

The entire alphabet is found in these four lines:

God gives the grazing ox his meat,
He quickly hears the sheep's low cry;
But man, who tastes His finest wheat,
Should joy to lift His praises high.

SAY what is well, and do what is better.

DOMESTIC ECONOMY.

To Drive Rats Away Without Poison.

We know of three methods: First, the old French plan; this is followed chiefly in Paris by men who make it a special business. They take a deep tub with water in the bottom, and a little elevation in the middle like an island, on which is only a place for just one rat to sit. The top is covered, and has a large balanced valve, opening downward; on the middle of this valve a piece of fried pork or cheese is fixed, and when a rat walks on it to get the cheese, the valve goes down, and drops the rat in the water, and moves back into position. A road is made from a rat hole to the top of the tub by means of a piece of board rubbed with cheese, so as to make the walk attractive to the rats. In the course of a single night some ten, twenty, or even more rats may go down, and if the island was not there they would be found most all alive in the morning quietly swimming around; but the provision of the little island saves the trouble of killing them, because their egotistic instinct of self-preservation causes them to fight for the exclusive possession of the island, on which in the morning the strongest rat is found in solitary possession; all the others being killed and drowned around him.

Second, the New York plan, invented by one of our friends. The floor near the rat hole is covered with a thin layer of moist caustic potassa. When the rats walk on this it makes their feet sore; then licking their feet makes their mouths sore; and the result is that they shun this locality, not alone, but to tell all the rats in the neighborhood about it, and eventually the house is entirely abandoned by them, notwithstanding the houses around may be teeming with rats.

Third, the Dutch method; this is said to be used successfully in Holland; we have, however, never tried it. A number of rats are left together to themselves in a very large trap or cage, with no food whatever; their craving hunger will, at last, cause them to fight, and the weakest will be eaten up by the others; after a short time the fight is renewed, and the next weakest is the victim, and so it goes on till one strong rat is left. When this one has eaten the last remains of any of the others, it is set loose; the animal has now acquired such a taste for rat-flesh that he is the terror of ratdom, going round seeking what rat he may devour. In an incredible short time the premises are abandoned by all others, which will not come back before the cannibal rat has left or has died.

COMPOSITION OF WORCESTERSHIRE SAUCE.—White vinegar, 15 gallons; walnut catsup, 10 gallons; Madeira wine, 5 gallons; mushroom catsup, 10 gallons; table salt, 25 pounds; Canton soy, 4 gallons; powdered capsicum, 2 pounds; powdered allspice, 1 pound; powdered coriander seeds, 1 pound; cloves, mace, and cinnamon, of each $\frac{1}{2}$ a pound; assafetida, $\frac{1}{2}$ pound, dissolved in brandy, 1 gallon. Boil 20 pounds of hog's liver in 10 gallons of water, for 12 hours, renewing the water from time to time. Take out the liver, chop it, mix with water, and work it through a sieve; mix with the sauce.

Imitation No. 1.—White vinegar, 240 gallons; Canton soy, 36 gallons; sugar house syrup, 30 gallons; walnut catsup, 50 gallons; mushroom catsup, 50 gallons; table salt, 120 pounds; powdered capsicum, 15 pounds; allspice, 7 pounds; cloves, mace, and cinnamon, of each 4 pounds; coriander, 7 pounds; assafetida, 2 $\frac{1}{2}$ pounds; dissolved in St. Croixrum, 1 gallon.

Imitation No. 2.—White vinegar, 1 gallon; Canton soy, 1 pint; molasses 1 pint; walnut catsup, 1 $\frac{1}{2}$ pints; table salt, 4 ounces; powdered capsicum, 1 ounce; allspice, 1 ounce; coriander $\frac{1}{2}$ ounce; cloves, $\frac{1}{2}$ ounce; mace, $\frac{1}{2}$ ounce; cinnamon, 6 drachms; assafetida, $\frac{1}{4}$ ounce; in rum 4 ounces; mix.

Imitation No. 3.—Take port wine and mushroom catsup, of each 1 quart; walnut pickle, 1 pint; soy, $\frac{1}{2}$ pint; pounded anchovies, $\frac{1}{2}$ pound; fresh lemon peel, minced shallots, and horse radish, each 2 ounces; allspice and black pepper, bruised, each 1 ounce, (or currie powder, $\frac{1}{2}$ ounce), digest for 14 days, strain, and bottle.

FASTENING LOOSE WINDOW SASHES.—The most convenient way to prevent loose window sashes from rattling unpleasantly when the wind blows is to make four one sided buttons of wood, and screw them to the stops which are nailed to the face casings of the window, making each button of proper length to press the side of the sash outwards when the end of the button is turned down horizontally. The buttons operate like a cam. By having them of the correct length to crowd the sills of the sash outwards against the outer stop of the window frame, the sash will not only be held so firmly that it cannot rattle, but the crack which admitted dust and a current of cold air will be closed so tightly that no window strips will be required. The buttons should be placed about half way from the upper to the lower end of each stile of the sashes.—*Industrial Monthly.*

SNOW BALLS.—One cup of sugar, two eggs, four tablespoonfuls of milk, one teaspoonful of cream of tartar, one teaspoonful of soda if the milk is sour, if sweet one-half teaspoonful, flour enough to roll into balls. Fry in lard, dip in the white of an egg, then white sugar till white all over.

Filters and Filtering.

Water, wine, spirits, jelly, syrup, tinctures, and a great variety of other fluids, hot and cold, often contain substances which should be separated, in order to render the fluid clear and bright. As regards water filtering, it has become pretty general; but in domestic life there are fluids, such as wine, liquid jelly, syrup, etc., which are required to be made "clear" before they are put on the table. There are three kinds of filters—sponge for watery liquids, cotton for spirituous fluids, and wool for gelatinous fluids and oils. In every well appointed kitchen, there are tin or porcelain funnels. For filtering watery fluids it is only necessary to insert, in the choke of the funnel, a V shaped piece of fine sponge. All such liquids, on being put into the funnel, will pass through the sponge, and become quite clear. When this effect ceases the sponge must be removed, and well cleansed. Viscous fluids are best cleared by filtering through a cone of white blotting paper, shopped by folding a square piece of paper from corner to corner, then folding the triangle into half its size, and opening the folds; it will fit any funnel, which will act as a support to the paper.

Wines, etc., poured into this, will run through perfectly bright. In some cases where the wine is only a little thick from lees, cork, or other mechanically suspended substance, it can be made quite clear by filtering through a wad of white cotton put in the choke of the funnel; and when this answers, it is much quicker than the paper filter. For jelly and oil, wool alone is the proper medium for filtering. The felted wool jelly bag is pretty well known as the best means of clearing calves' foot jelly, and it also answers for olive and other oil. These bags are, however, too expensive to be generally used; hence they are rarely seen in kitchens. A good substitute for the wool bag is a colander, on the inside of which a new flannel lining should be fitted, made of double stuff. A wad of white knitting wool, put in the choke of a funnel, will do to filter any small portion of such fluids. Many a good glass of port wine has been wasted for the want of a penny paper filter.

TO MAKE CHUTNEY.—Indian chutney is a compound of mangoes, chillies, and limejuice, with some portion of other native fruits, such as tamarinds, etc., the flavor being heightened by garlic. For family use the following receipt will be found very suitable: Chillies, 1lb. to 1 $\frac{1}{2}$ lbs.; apples, 1lb.; red tamarinds, 2lbs.; sugar candy, 1lb.; fresh ginger-root, 1lb.; garlic, $\frac{1}{2}$ lb. to $\frac{3}{4}$ lb.; sultana raisins, 1 $\frac{1}{2}$ lb.; fine salt 1lb.; distilled vinegar, 5 bottles. The chillies are to be soaked for an hour in the vinegar, and the whole ground with a stone and muller to a paste. Here is another receipt which may be depended upon for making an excellent chutney:—1lb. salt; 1lb. mustard seed; 1lb. stoned raisins; 1lb. brown sugar; 12ozs. garlic; 6ozs. cayenne pepper; 2 quarts unripe gooseberries; and 2 quarts best vinegar. The mustard seed should be gently dried and bruised, and the sugar made into a syrup with a pint of the vinegar; the gooseberries dried and boiled in a quart of the vinegar; the garlic to be well bruised in a mortar. When cold, gradually mix the whole in a mortar, and with the remaining vinegar thoroughly amalgamate them. To be tied down close; the longer kept the better.

SEA WATER IN BREAD-MAKING.—It was stated at a meeting of the Academy of Science of Paris that while excellent bread can be made with sea water, and that this forms a good tonic, soup or broth made with sea water is entirely uneatable. It would appear that the chloride of magnesium in the sea water is raised to a temperature, during the process of baking, sufficiently high to effect its destruction, and thereby cause its peculiar taste to disappear, which is not the case when boiled, as for soup. If, however, cane-sugar is added to the soup, a compound is said to be formed of the sugar with the chlorides, which has not the disagreeable taste of the latter.

TO DETECT THE ADULTERATION OF WINES.—The adulteration of wines with cider can easily be detected by filtering and adding ammonia in excess. The apple juice will immediately deposit crystals on the side of the test tube. Genuine wine sheds a pulverulent deposit which does not adhere to the glass, and is devoid of a crystalline structure. Acetic acid will dissolve either of these precipitates. The deposit from the cider consists of flat crystals with parallel sides; that from wine shows star-shaped formations. The treatment with acetic acid shows the presence of lime and phosphoric acid in both cases, the quantity of lime in the wine being minute.

CURING OF HAMS AND BACON.—In curing hams and bacon it will be found very advantageous to use the same quantity of common soda as of salt-peter—one ounce and a half of each to fourteen pounds of ham or a piece of bacon, using the usual quantity of salt. The soda prevents that hardness in the lean of the bacon which is so often found, and keeps it quite mellow all through, besides being a preventive of rancidity. This receipt has been very extensively tried for fifteen years, and invariably approved of.

SOFT CREAM BISCUITS. Sift one teaspoonful each of salt and soda into one quart of flour, in the bread pan. Have ready one pint of sour cream, beat one egg and add to the cream, stir, roll and cut, and bake as quickly as possible.

Sleep and Lodging.

Next to food comes lodging. To secure a comfortable bed is to the greater part of mankind still a desideratum—and yet any man of ordinary capacity may himself make the foundation for an excellent one with a few hours' labor. When we reflect on the importance of sleep, the time thus spent will not appear wasted. Without sleep insanity is certain. Nearly one-third of life must be passed in sleep. Why we are thus constituted is not to the present purpose. What relation the hours of sleep hold to the inclination of the earth's axis, or if the inhabitants of the planet Mars sleep, we shall not stop now to inquire. It is enough, with Sancho Panza, to invoke blessings on the man that invented sleep—"it covers one so like a blanket," "tired nature's sweet restorer, balmy sleep," descending as it does "like tired eyelids over tired eyes."

How strange it is that in this decade of the nineteenth century, we should first be able to compel the attendance, certainly and securely, of sleep—to realize the truth of the fable of Lethæan waters. Opium gave us this boon at the expense of a feverish reaction; morphine promised it, but failed in the performance; chloroform gave it, but at a serious risk. How suddenly chloral has come into use! Almost as quickly as the shades of night, which it so aptly represents, has this invention crossed the Atlantic on downy pinions to visit the abodes of American care and distracting brain labor. This is the veritable angel of sleep. Of the bed-bottoms conducive to sleep: The foundation of the superstructure should be firm, open, elastic, noiseless; affording no harbor to insect denizens. It is of no consequence to the prominent hip-bones and short ribs of an emaciated sleeper, whether they are a few inches more or less distant from the floor; but it is of consequence that the prominent portions of the body should find for themselves corresponding depressions in the supporting medium, thus extending the surface of contact and avoiding chafing.—*Ex*

A HANDY KITCHEN.—The other day we went into a model kitchen. Between it and the dining-room a small passage served as a closet, and also to keep all odors of the kitchen from reaching the dining-table. On one side of the kitchen was a large range, beyond that a sink with hot and cold water leading into it, and a waste-pipe from it. At the end of the room, between two windows, screened to prevent the ingress of flies, stood a long work-table, with a series of drawers. On the other side of the room were two stationary tubs, each with faucets for hot and cold water and a discharge pipe. Hinged covers made an ironing table firm and ample.

Just beyond the sink a door opened into the pantry, a room four by ten, with a window, a shelf running round three sides of it, wide and high enough to cover barrels of flour, sugar and meal.

At one end of the space beneath this shelf was filled with deep drawers for towels, tablecloths, the ironing blanket, starch and blueing, each in appropriate place. The housewife needed but a step in there and find everything at hand necessary to prepare food for the table. No running up stairs for meal and flour, no getting ready to make bread, or pies, or cake; pans are close by; spices in neat boxes at her elbow; coffee-mill, with a little shelf under it to hold the cup, was screwed over the window casing. What hardships are there in doing work in such a kitchen?—*Ex*.

RAISED CRUTT FOR PIES.—Some persons cannot eat rich pastry, and for their benefit I will give a plain recipe. Take one pound of flour, three ounces of butter, one tablespoonful good yeast, and milk to form a dough. Rub the butter in flour, add the milk and yeast, and set to rise. When light, roll out pretty thin, and line the plates. Put in the fruit, roll out the cover, and set the pies in a quick oven. This makes good crust.

TO KEEP DRIED FRUIT FREE FROM WORMS.—Housekeepers and others are much troubled to keep their dried fruit free from worms. A contemporary says that a handful of sassafras bark sprinkled through a bushel of fruit is a preventive from this pest. Has any one ever tried it?

HOW TO STOP A PINHOLE IN A LEAD PIPE.—Take a ten-penny nail, place the square end upon the hole, and hit it two or three slight blows with a hammer, and the orifice is closed as tight as though you had employed a plumber to do it at a cost of a dollar or more.

CHEAP CAKE.—Chop a cupful of fat pork and pour on it a cupful of boiling water, add a cupful of molasses; boil a few minutes, and add salt, soda, spice, (cloves are best,) and flour for a batter. Bake in one loaf.

The very best way to clean a stained steel knife is to cut a solid potato in two, dip one of the pieces in brick dust (such as is usually used for knife cleaning), and rub the blade with it.

JOHNNYCAKE.—Beat one egg, add one cup of sour milk, one cup of sweet milk, one teaspoonful of soda, from one to three tablespoonfuls of molasses, salt, and stir quite soft.

Hog's hair is recommended for hen's nests by a correspondent of the *World*. He says hens setting in these nests have never been infested with lice.

The richer a man makes his food, the poorer he makes his appetite.

Road Etiquette.

Perhaps there is good reason in despising some of the rules of etiquette imposed by fashionable society. If a man wishes to eat his mashed potatoes with his knife, or prefers to pour his hot coffee into a saucer rather than burn his throat, we are willing he should have his liberty. But there are some things that no man has a right to do, and that no well-bred man will wish to do. No man will wish to put his fork into another man's plate, or drink from another person's cup. If two men sleep in the same bed, and one of them crowds the other to the rail, he is called a hog.

Now, there are certain rules of good breeding that apply to the road as well as the table or the fireside. We are not talking now about any laws in regard to the road other than the laws of common sense and good breeding. When two teams meet, good breeding requires that each give half the road. Yet we often meet teamsters who refuse to obey this simple rule, because they have the advantage at the time. A man with a heavy lumber-wagon has no more right to crowd a light carriage into the ruts or bushes, than a burly lubber would have to force his weaker bed-fellow to sleep on the rail. If some peculiarity in his load requires him to keep the track, he can stop his team, and politely ask for it, and thank the other for giving it.

When one teamster wishes to pass another on a dusty road, he should ask the privilege of doing so, especially if there is a lady in the forward wagon. When the forward team finds that his own team travels slower than the other, he should hold his horses to their slowest pace till the other passes. A man has no more right, under these circumstances, to whip up his slow team just enough to keep the other in the rear, than he has to build a fence across the road, or do any other ill-mannered, vulgar thing.

We suppose there are statute laws to regulate the conduct of teamsters, but we have not felt it necessary to refer to them; for we think a little attention on the part of teamsters to the simple rules of good breeding, will do as much to prevent accidents and secure comfort and good feeling on the road as any set of laws that could be enacted.

GOATS AND RATS.—A correspondent of the *German Town Telegraph* says: Being sadly plagued with rats about my house and farm buildings, I tried in vain to catch them; they are too cunning to be trapped, and to lay poison I dare not for fear of killing my dogs, cats and hogs, and to wait for them with a gun was a loss of too much time, though I have dropped three at a shot. At last I purchased two goats, which I have kept about my fold, barn and stables, the pig styes being in the fold. In a short time they emigrated—they evacuated the place, cleared right out, every jack of them, and I have not seen a single rat about the place for upwards of three years, but my neighbors who are within eighty rods have plenty of all sizes and ages. Perhaps it is not generally known that where there are many horses stabled together very little sickness prevails if there is a goat kept about the yard and stables.

FASHION IN THE SANDWICH ISLANDS.—The costume introduced by the missionaries, fifty years ago, is still the dress of the native women of the Sandwich islands. It consists of long skirts, high waists, immense coal-scuttle bonnets, and, apparently, no underclothing. It is said that it was with great difficulty that the missionaries succeeded in making these children of nature adopt any dress whatever, even for decent attendance at church. Even now, I have been told, on some of the islands the people bring, on Sunday, all their clothing in a bundle to the door of the church, where they dress, and after service doffing their costume, carry it homeward under their arms.—*Pumpelly.*

FERTILITY OF ENGLISH SOIL.—One of the reasons why the tillable soil in England is kept so fertile is, that fully one-third of the grain of all sorts which is consumed there is imported, fed to stock, and the manure carefully husbanded. Two-thirds of the Indian corn used by English farmers is from the United States. As high as 75,520 bushels has been received from New York in one day. Farmers are the principal buyers, and they now pay \$1.06 in gold.

AMERICAN CHEESE IN ENGLAND.—A London produce dealer writes that the prejudice against American cheese is worn out in that city, and that it is now a popular article of food there. He thinks it would not be best to change the shape of the cheese designed for export to England, but suggests that the cheese be made smaller. It is a common complaint, he says, that American cheese does not keep well; mild and good when landed, it often becomes strong, and strong cheese cannot be sold to advantage.

USEFUL WATER TABLES.—1 cubic foot, 1,728 inches, is 7.5 gallons, and weighs 62.5 lbs. 1 gallon, 231 cubic inches, weighs 8.338 lbs. 1,000 gallons weigh 8,338 lbs. 27,000 gallons will cover 1 acre 1 inch deep. 1,000 gallons per hour constantly flowing is equal to 1 $\frac{1}{2}$ inches Miners' Measurement, with 6 inches pressure, and is equal to 2 $\frac{1}{2}$ inches without pressure constantly flowing, as from a box through an orifice 1 inch by 2 $\frac{1}{2}$ inches.



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The Progress of Our Paper.

To extend the influence of the *PACIFIC RURAL PRESS* has been our great aim since its commencement. With that accomplishment comes our reward.

We have met with encouraging success. We find our field of usefulness extending. We have been liberally patronized. This has given us both will and power to improve our journal, and we have accordingly increased the expenses of its issues.

The type in most of our pages has been changed from bourgeois to brevier, a size smaller, which admits of one-third more reading in a column.

We are now paying large sums for the preparation of editorial and other original matter. We issue to-day a

Twenty-Four Page Sheet,

In order to give an increased amount of reading matter, and accommodate advertising which we could not otherwise insert without interfering with our usual amount of reading.

Our advertising, it may be seen, is first-class. It is largely by such favorable patronage that we are able to furnish so good a paper on this Coast, without greater expense to the reader. We hope our extra efforts will be appreciated as happily as our former labors.

WATERMELONS.—In a few weeks we will have printed and ready for dissemination, a work on the manufacture of sugar from melons, both watermelons and cantelcup. It will be one of those plain written pamphlets, without technical phrases or terms, sometimes so difficult to be understood, that anybody who can run or engineer a good sized tea-kettle, can operate all the appliances required for making good sugar and syrup from molasses. So plant freely of melons without fear of losing them for want of a market.

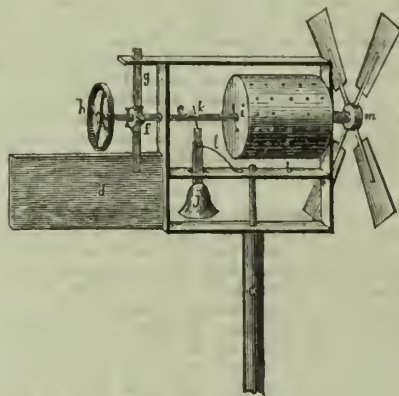
ON FILE.—Cherry Currants, etc. Letter from E. W. Letter from Davisville, Yolo Co., signature indecipherable.

A *WESTERN* editor reports money "close, but not close enough to be reached."

The Thresher's Guide and Farmer's Friend.

The above is the title of a work by D. W. Hollahan, soon to be issued from the press of Dewey & Co. It is probably the only work of the kind ever printed, and will contain full and complete directions for the management of field threshing machines; the setting up of the same in the field, the care of every part of the apparatus, how to prevent accidents and delays, by pointing out the causes of the same; the application of horse and steam powers, and their management with full instructions for keeping all parts of a complete threshing establishment in perfect order, and at the least possible cost of time, labor and money. It will be a work so complete that every farmer who owns or employs a threshing machine, will find the purchase of a book a good investment.—*March*, 1872.

N. B.—This work will issue on or before May 20th. Price, \$1.50. It comprises about forty pages, handsomely printed and bound in cloth. It is not a book of many words, but rather of dearly-bought practical knowledge, such as skilled workmen often retain, as far as possible to themselves, for their own personal benefit. We think it will prove worth many times its cost to its purchasers. A small edition only has been printed, and if all are sold the profit to the author will not be large, as the price would indicate.



A Novel Scarecrow.

The above cut should have accompanied the article on page 278, "To Protect Fruit Trees from Birds," to which the reader is referred for a description.

Movement of New Machinery.

It was recently stated in one of our city dailies that 2,000 mowers and reapers had been delivered by railway in Sacramento this season, and that still there would likely be a famine of reaping machines. The statement is greatly exaggerated; no such number of machines have been brought to California this season, and though the demand for such implements is greater than ever before, it is estimated that but about 700 or 800 new machines at most will be purchased.

Our hardware stores are remarkably active, and new life seems manifesting itself in all parts of the country. As a matter of interest to our readers, as showing what is done in the line of purchase, we will mention the names of parties who have within the last three or four weeks, bought of a single firm—Treadwell & Co.:—Heavy Harvesting Machines, viz: Hamlin & Patterson, Modesto; John Duke, Batavia; D. & D. Bain, Centerville, Alameda Co.; W. B. Brown, Collinsville; Webster & Co., Stockton; Wm. Carter, Vallejo; J. J. Strong, Rio Vista; Hellman & George, Anaheim; McKinstry & Co., Dixon; Beazell & Crowell, Washington Corners; S. McBaldwin, Los Angeles, have all purchased Hoadley's Mounted Engines and Russell's Threshers, each thereby securing a complete set of steam-threshing machinery. The Oregon and California Railroad Company have also purchased a heavy Hoadley Portable Engine and saw-mill; Bateman & Keller of Yreka, have also purchased a Hoadley Engine and mill; Messrs. Treadwell & Co., have besides just shipped W. B. Crane of Portland, a 20-horse-power Hoadley Mining Engine and a 12-horse-power Hoadley Hoisting Engine, saw-mill, Sturtevant Blower, Blake's Steam Pump, etc.; and Pletz & Sherman, Arizona, a Hoadley with saw and shingle mills; W. W. Doherty, of Nevada, a Hoadley 15-horse-power engine; J. Dufries, on the Amoor river, Russia, a large Hoadley engine and a heavy order of other machinery, and a large lot of Russell Threshers; Haines' Heading horse-power Reapers, Mowers, Rakes, etc., to various parts of California, Nevada and Oregon. Besides this, there has been a large trade in general hardware and mining goods.

Rules Governing the Exhibition by the Vine Growers' and Wine and Brandy Manufacturers' Association.

The Vine Growers' and Wine and Brandy Manufacturers' State Association held their annual fair in connection with the fair of the State Agricultural Society. It will be seen by a perusal of the following rules adopted by the Association, that they intend not only to make a grand exhibition of the products of the vine, but to collect and distribute all possible information touching all branches of the industry. The information so much needed by a large majority of our wine growers, will thus be placed within the reach of all and will be invaluable and of great benefit to the general interests of the State. We call special attention to the rules and to the premium list in our advertising columns.

RULE I. Each exhibitor of brandy shall, at the time he enters his brandy for exhibition, furnish the Secretary with a full and truthful statement as to whether it is made from the grape entire, from wine or from pomace, and the variety or varieties of grapes used in either case. The character of the soil and subsoil, the altitude, as near as may be, of the locality where the grapes were grown. The kind of still used and the mode of distillation, including the manner of applying the heat. Whether rectified or flavored in any way, and if so with what ingredient or ingredients and how applied. No brandy less than proof shall receive any premium.

RULE II. Each exhibitor of wine shall furnish the Secretary, at the time of entering the same, with a full and truthful statement of the variety or varieties of grapes from which it is made, the character of the soil or subsoil and altitude, as near as may be, and general aspect of the locality in which the grapes from which it was made were produced, the age of the vines, the distance apart at which they are planted and the manner of cultivating and pruning the same. Also, whether the vineyard was planted with cuttings or with rooted vines, and the number of grapes in tons and wine in gallons produced to the acre. Also, whether the juice was fermented on the skins or not, and a full and detailed statement of the manner in which the grapes and wine have been treated from the time of picking the fruit to the time of placing the wine on exhibition, including the stage of ripeness at which the grapes were picked and crushed. He shall also exhibit a sample of the grapes grown on the same vine as those from which the wine was made.

RULE III. No exhibitor of grapes, raisins, wines or brandy shall receive a premium for any one of these articles of which he is not the producer or manufacturer; and no wine containing any ingredient except the pure product of the grape shall receive any premium offered by the Association.

RULE IV. All wines shall be exhibited in quart champagne bottles, corked without sealing, and before being placed in the hands of the committee for testing shall be so wrapped with paper or other material as to completely hide the label and prevent the possibility of identifying the ownership of the same, so as to avoid the effects of bias on the part of the committee in favor of locality or individuals.

RULE V. After the regular committees have passed upon the brandies or wines, they shall seal up their decisions and place them in the hands of the Secretary to be kept strictly private. The exhibitors of the brandies and the exhibitors of the wines shall then form themselves into committees, to be known as the Committee of Exhibitors, and the samples of the brandies, concealed as above, shall be submitted to the committee on brandy so constituted, and the samples of wine to the wine committee so constituted—and they shall in like manner make up their decisions, seal them, and hand them to the Secretary—but the award of the regular committee shall be final as to the premiums, and the decision of the committee of exhibitors shall only be considered as a test of judgment.

RULE VI. All the committees shall classify all the samples of wine or brandies submitted to them in the order of their quality, and shall state in detail the reasons for their decisions.

RULE VII. When all the reports of the committees on wines, brandies, grapes and raisins have been written and placed in the hands of the Secretary he shall call a meeting of the Association at some convenient place. At this meeting shall be opened and read the reports of the committees, both regular and of the exhibitors, and the statements of exhibitors, above required, and all questions raised by such reports and statements, may be fully discussed under such rules as the Association may adopt for the occasion.

RULE VIII. Each exhibitor shall furnish for exhibition and testing at least two bottles of each variety of brandy and wines exhibited, and at least one duplicate bottle of each variety, to be kept in store by the Association to observe and note effects that age will produce on the same.

RULE IX. Each exhibitor of raisins shall file with the Secretary a statement of the soil, etc., as required by exhibitors of wine, and in addition shall set forth his mode of picking, as to degrees of ripeness, and his manner of drying and handling and packing the same.

RULE X. Each exhibitor of grapes for a pre-

mium shall give all the names of each variety by which he knew them, and shall exhibit a section of the wood of the vine of each variety containing at least one bunch of grapes and samples of the leaves, to enable the Committee on Classification to give to them the proper description, and to obtain a photograph true to nature of the wood, berry and leaf for illustration.

RULE XI. The exhibition of the California Vine Growers' and Wine and Brandy Manufacturers' Association will be held at the same time and in the same building with the State Fair, but the whole management of the same will be under the control of the Board of Directors of the Association, subject to the rules governing the State Agricultural Society's Fair. All articles intended for exhibition at the Vine growers' Fair, must be directed to I. N. Hoag, Secretary C. V. G. and W., and B. M. A., Sacramento, accompanied by letters explaining the same, and any directions necessary to avoid mistakes.

BRIDGES.—The Pacific Bridge Company of Oakland have procured ground on Berry street, near Third, and are putting up machinery for the manufacture of bridges. Hereafter all their timber will be dressed to an even size and framed by machinery invented for the purpose. This will render these bridges considerably stronger, and in the opinion of many engineers 25 per cent. more durable, as timber by being dressed has a smooth hard surface, which is less affected by moisture than when rough.

This company furnish bridges of any desired span ready to raise, with all iron work complete, or when desired they furnish the bridge and raise and finish the same.

They have already contracted for, or completed, bridges in the counties of Butte, Sonoma, San Mateo, Alameda, Merced, Marin and Santa Cruz. They are now erecting one over the San Lorenzo River for the California Powder Co., which has a span in the clear of 160 feet. It is built strong enough for railroad cars, and will be completed the present month.

They will frame two bridges, one for Alameda county and one for Marin county, immediately. When their machinery is in motion we shall examine it and give a more extended description. The company intend to remove their office to the city as soon as their machinery arrives. They propose to make a specialty of working all kinds of heavy timber, and manufacturing heavy iron and wooden structures. They are still in room 14, Wilcox Block, Oakland, where they will take pleasure in showing all who call, models and designs in bridge architecture.

Peerless Potato.

EDITORS PRESS:—In your last issue you spoke of the Peerless potato being without a rival as a late variety. Will you tell me what are its particular claims to an endorsement so unqualified and from so high a source as the *RURAL PRESS*, and whether the seed can be obtained in quantity, and at what cost, and oblige a

SUBSCRIBER.

Bodega, April 22, 1872.

When we spoke of the Peerless, as the best potato known, and without a rival, it was not from any personal acquaintance with that variety, beyond testing a single specimen, and observing its fine form, size and color, and its perfect condition as regards keeping, as late as two weeks ago. But if it requires a further endorsement to establish its merits, we quote from the *Western Pomologist and Gardener* as follows:—"The Peerless is remarkably prolific, and has its large and beautiful potatoes, in a thick cluster, in the center of the hill."

"The potato is white, and we know of no other variety with such a perfect sample of small eyes and beautiful shape. It needs a little longer boiling than the Early Rose, when it becomes a soft, mealy mass, delightful in flavor."

Bliss & Sons in their description of the Peerless, say: "A late potato, skin clean, clear white, very much so; never russet, flesh white, mealy when boiled, grows large and is very productive." We know of no seed of this variety in the State for sale. If there is, holders would do well to advertise.

DEEP ploughing and subsoiling greatly improve the productive powers of a soil that is no wet.

Daily Weather Record,

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK
ENDING WEDNESDAY, MAY 1, 1872.

Place of Observation.	Date.	Observation taken at 9 A. M.	Height of Barometer.	Direction of Wind.	Force of Wind.	Force of Wind at Sea.	Amount of Rain.	State of Sky.	State of Weather.
San Francisco.	Thurs. 25	30.04	47.55	S. W.	20	Brisk	1-2	Clear	Fair
	Fri. 26	30.00	46.89	S. W.	4	Gentle	1-2	Fair	Fair
	Sat. 27	29.98	47.85	S. W.	14	Fresh	1-2	Fair	Fair
	Sun. 28	30.03	48.13	S. W.	4	Gentle	1-2	Fair	Fair
	Mon. 29	30.23	47.85	Cal.	2	Light	1-2	Fair	Fair
	Tu. 30	30.25	47.85	Cal.	2	Light	1-2	Fair	Fair
	Wed. 1	30.25	47.85	Cal.	2	Light	1-2	Fair	Fair
San Diego.	Thurs. 25	29.89	57.81	S. W.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.01	57.79	S. W.	10	Fresh	1-2	Cloudy	Cloudy
	Sat. 27	30.01	57.79	S. W.	10	Fresh	1-2	Cloudy	Cloudy
	Sun. 28	30.11	57.93	N. E.	2	Light	1-2	Hazy	Hazy
	Mon. 29	30.11	57.93	N. E.	2	Light	1-2	Hazy	Hazy
	Tu. 30	30.11	57.93	N. E.	2	Light	1-2	Hazy	Hazy
	Wed. 1	30.11	57.93	N. E.	2	Light	1-2	Hazy	Hazy
Portland, Or.	Thurs. 25	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.23	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Portland, Me.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Corvallis.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Cheney.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Denver.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Omaha.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
Davenport.	Thurs. 25	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Fri. 26	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sat. 27	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Sun. 28	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Mon. 29	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Tu. 30	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy
	Wed. 1	30.03	47.91	Cal.	1	Light	1-2	Cloudy	Cloudy

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

(The prices given below are those for entire consignments from first hands, unless otherwise specified.)

SAN FRANCISCO, Thurs., A. M., May 2.

FLOUR—We note a fair local demand with a good inquiry for export. Sales reported embrace 8,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 5,000 Oregon extra. We quote prices as follows:

Superfine, \$5.00@5.12½; extra, in sacks, of 196 lbs. \$6.25@6.37½; Oregon brands, 5.50@6.12½.

WHEAT—The market has been firm with good demand since our last review. Sales aggregate 20,000 sacks fair to choice at \$1.70@2.00 per 100 lbs. Quotable at close at \$1.70@2.05 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 1d. @ 12s. 4d. per cental.

BARLEY—Market quiet. Sales embrace 8,000 sacks ordinary coast to choice bay, at \$1.37½@1.60, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.55@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.60@1.65 for yellow and white per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.25 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.30@2.50 per 100 lbs.

RYE—According to quality is quotable at \$2.20@2.25 per 100 lbs.

STRAW—Quotable at \$8.00@8.50 per ton by the cargo.

BRAN—Is selling at \$16 per ton from the mill.

MIDDINGS—For feed, are \$22.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been fair, and prices at close are \$12.00@20.00 for fair to choice per ton. There is little prospect of the market recovering, in view of the excellent prospects of good crops and the near approach of the time for cutting it.

HONEY—Is selling at 15@16c in the comb and 10@12½c strained.

POTATOES—The market shows a decline. Sales of Humboldt at 70c; fair Tomatoes 42½c, and new Mission \$1.75@2.00.

HOPS—The range is 50@65c.

HIDES—During past week 3,230 Cal. dry sold at 18½@19½, and 1,240 salted at 8½@9½.

WOOL—The market has been decidedly quiet this week and large dealers say they have not sold a pound. Buyers and sellers are still struggling about rates, there being a difference in their views. Range between 40@50c. Stocks are accumulating and some understanding will probably be arrived at during the next 10 days, as some outlet for large receipts must soon take place.

TALLOW—Market steady at 8½@9¼c. per lb.

SEEDS—Flax 3c; Canary, 5@7c; Alfalfa, 16@20c; Mustard, 3@6c. for the different kinds.

PROVISIONS—California Bacon 13@14½c; Oregon, 13½@14½. Eastern do. 11@12½ for clear and 14½ for sugar-cured Breakfast; Cal. Hams 14½@15; California Sugar-cured Hams, 16c; Eastern do, 15@16c; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues firm, owing to a concentration of stocks in the hands of two operators. The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25@3.50, large \$3.75@4.00; Bayo, \$4.25; Pink and Red are scarce.

ONIONS—Fair to choice, \$7.00@8.00 per 100 lbs. Few in market.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Hickory, 12c; Brazil, 16c; Chili Walnuts, 15c; Italian Chestnuts 25@30c; Eastern Chestnuts, 15@20c; French Almonds, 22@25c; Princess Almonds, 35@40c; Cocoanuts, \$8.00@10.00 per 100.

FRESH MEAT—Market shows a decline since last report. We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 11@11½c. do. 2d quality 10c per lb.; do. 3d do. 6@8c.

VEAL—Quotable at 8@11c.

MUTTON—6½@7c. per lb.

LAMB—Easier at 10@11c.

PORK—Undressed grain-fed is quotable at 6½@6¾c. dressed, grain-fed, 9@9½c. per lb.

POULTRY—Live Turkeys, 23@25c. per lb.; dressed, 25 per lb.; large Hens \$8.00@9.00; Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$5.00@9.00; Ducks, tame, \$9.00@10.00 per dozen; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50.

English Snipe, \$2.00@2.50.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in liberal supply; it may be quoted at 20@25c, with a few choice lots at 27½; New firkin is quotable at 22@25c; old is dull at 12½@20c.

CHEESE—New California, 12½@16c; Eastern, none in market.

Eggs—California fresh, have declined to 32½@34c. per doz.

LARD—California 12½@13½; Oregon, none in market. Eastern in cases 14@14½c; do in tcs. 11½@12c. per lb.

FRUIT.

Tah. Oranges, 14 00@15 00 Apples, eating, bx 2 25@2 75
California do. 10 00@25 00 do cooking, bx 1 00@2 00
Limes, 10 00@25 00 Pineapples, 10 00@15 00
Austin Lemons, 10 00@25 00 Strawberries, 10 00@15 00
Sicily do 10 00@25 00 Gooseberries, 10 00@15 00
Cal. do 10 00@25 00 Cherries, 10 00@15 00
Bananas, bunch 2 00@2 50

DRIED FRUIT.

Apples, 10 00@15 00 Raisins, 10 00@15 00
Pears, 10 00@15 00 Black Figs, 10 00@15 00
Peaches, 10 00@15 00 White, do 10 00@15 00
Apricots, 10 00@15 00
Plums, 10 00@15 00

VEGETABLES.

Cucumbers, 10 00@15 00
M. rft. squash, 10 00@15 00
Asparagus, 10 00@15 00
Tomatoes, 10 00@15 00

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is firm for all descriptions. Burlap sacks 17½@18c; Flour sacks 10@10½c. for qrs. and 16@16½c. for hlfs. Standard Gunnies are nominal at 20@21c; Wool 75@80c.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been quiet, and a very light demand for export. Cargo rates are very firm and there is probability of an advance shortly.

In view of hardening wholesale rates, the Lumber Dealers Exchange have resolved to advance retail prices \$2.50 per M on and after the middle of this month. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood \$16; refuse \$12; dressed do. \$30; refuse do. \$20. We quote Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$42.50@45; Cedar \$50@55. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange:

Puget Sound Pine—
Rough, 1st M. \$20.00
Fencing and Stepping, 1st M. 32.50
Fencing, second quality, 1st M. 25.00
Laths, 1st M. 3.00
Fencing, 1st lineal foot. 1c
Redwood—
Rough, 1st M. 20.00
Rough refuse, 1st M. 15.00
Rough Pickets, 1st M. 18.00
Rough Pickets, pointed, 1st M. 20.00
Rough Pickets, 2nd M. 15.00
Siding, 1st M. 25.00
Tongued and Grooved, surfaced, 1st M. 35.00
Half-lineal surfaced, 1st M. 35.00
Rustic 1st M. 37.00
Batten 1st lineal foot. 1c
Shingles 1st M. 3.00
Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$60 per M.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manilla, 19½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c. @ 5½c. Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-bb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, \$10.50@11; in kits No. 1 \$2.50@2.75; do No. 2 \$2.00@2.25. Smoked Salmon, 70@75c per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Golden C. 10½@11c; Hawaiian 7½c. as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c, and Castile, 13½@14c per lb.

TEA—We quote Young Hyson at 85c@1.15; Gunpowder, 95@1.50; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c@1.00; English Breakfast Congou, 50@85c; Basket 60@70c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, May 2, 1872	
MISCELLANEOUS.	
Butter, Cal. fr. do.	25 @ 32
do Oregon, do.	25 @ 32
Honey, per lb.	25 @ 32
Cheese, per doz.	20 @ 25
Eggs, per doz.	40 @ 45
Lard, per lb.	18 @ 20
Sugar, or, 7 lb. 100	9 @ 13
Brown, do.	9 @ 13
Beet, do.	12 @ 15
Sugar, Map. do.	25 @ 30
Plums, dried, do.	15 @ 30
Peaches, dried, do.	20 @ 30
Wool, 1st, new	10 @ 12
Second-hand do.	8½ @ 10
Wheat, 2nd, 22 1/2	18 @ 19

PRODUCE, ETC.	
Flour, ex. 5 bl. 6 00	6 @ 25
Superfine, do. 6 00	6 @ 25
Corn Meal, 100 lb. 3 00	6 @ 25
Wheat, 100 lb. 2 40	6 @ 25
Oats, 100 lb. 1 60	6 @ 25

FRUITS, VEGETABLES, ETC.	
Pine Apples, 1-5 00	6 @ 25
Bananas, bunch 5 00	6 @ 25
Cal. Walnuts, 1 lb. 20	6 @ 25
Cranberries, 1 lb. 12	6 @

NINETEENTH ANNUAL FAIR
OF THE
CALIFORNIA
State Agricultural Society!
TO COMMENCE ON THE
Nineteenth, and End on the Twenty-
Eighth of September, 1872,
AT SACRAMENTO CITY.

Over \$20,000 Appropriated for Premiums!

LIBERAL SPECIAL PREMIUMS
For all worthy articles exhibited, not mentioned in the Schedule.
Also, in addition to the Premiums named, the Society will give a GOLD MEDAL to the most Meritorious Exhibition in each of the seven Departments.

The Central Pacific Railroad Company will transport all articles and animals exhibited at the Fair, over their respective routes free of charge. Freight being paid on them to the Fair will be returned upon reshipment by the same owner, and exhibition of certificate of Secretary that the same has been exhibited. The same company will issue excursion tickets to all parties going to the Fair and returning, at about half price.

LIST OF PREMIUMS!
Open to all the World.

FIRST DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

LIVE STOCK.

HORSES.

In this department the same animal cannot be entered more than once, except in sweepstakes, or as a colt with its sire or dam, as a member of a family.
No animal will be allowed to compete for a premium unless free from disease or blemish which can be transmitted to posterity.

CLASS I—THOROUGHBRED HORSES.

In this class none will be permitted to compete but such as furnish a complete pedigree—tracing the entire line of descent to the English parent on the side of both sire and dam. The standard of authority for the pedigree of thoroughbred horses will be the English and American Stud Books.

Stallions.

Best four years old and over..... \$75
Best three years old..... 60
Best two years old..... 40
Best one year old..... 30
Best colt under one year..... 20

Mares.

Best four years old and over, with colt..... \$60
Best three years old..... 50
Best two years old..... 40
Best one year old..... 30
Best mare colt under one year..... 20

Families.

Best thoroughbred sire, with not less than ten of his colts, all thoroughbred..... \$150
Best thoroughbred dam, with not less than four of her colts, all thoroughbred..... 100
Best stallion, other than thoroughbred, with not less than ten of his colts, open to all..... 75
Best dam, other than thoroughbred, with not less than three of her colts..... 50

CLASS II—GRADED HORSES.

In this department none will be allowed to compete but such as furnish satisfactory proof of a cross of either sire or dam with thoroughbreds.

Stallions.

Best four years old and over..... \$50
Best three years old..... 40
Best two years old..... 30
Best one year old..... 20
Best colt under one year, without reference to sex..... 20

Mares.

Best four years old and over..... \$40
Best three years old and over, with colt..... 30
Best two years old..... 20
Best one year old..... 15
Best mare colt under one year..... 10

CLASS III—HORSES OF ALL WORK.

Best four years old and over..... \$40
Best three years old..... 30
Best two years old..... 20
Best one year old..... 15

Stallions.

Best four years old and over..... \$40
Best three years old..... 30
Best two years old..... 20
Best one year old..... 15

Mares.

Best four years old and over, with colt..... \$40
Best three years old..... 30
Best two years old..... 20
Best one year old..... 15

CLASS IV—DRAFT HORSES.

Best four years old and over..... \$40
Best three years old..... 30
Best two years old..... 20
Best one year old..... 15

Stallions.

Best four years old and over..... \$50
Best three years old..... 40
Best two years old..... 30
Best one year old..... 20

Mares.

Best four years old and over..... \$40
Best three years old..... 30
Best two years old..... 20
Best one year old..... 15

Best three years old..... 30
Best two years old..... 20
CLASS VI—CARRIAGE HORSES.
Best matched span carriage horses, owned and used as such by one person, Silver Goblet worth..... \$40
CLASS VII—ROADSTER TEAMS.
Best double team roadsters, owned and used as such by one person, Silver Goblet, worth..... \$40
CLASS VIII—SADDLE HORSES.
Best saddle horse..... Fine Bridle

CLASS IX—COLTS.

Free to all except those entered as thoroughbreds and graded.
Best yearling horse colt..... \$30
Best sucking horse colt..... 20
Best yearling mare colt..... 20
Best sucking mare colt..... 15
Best exhibit of not less than six colts, owned by one person, of any age or sex; can be entered in other classes when allowed by the general rules..... 50

CLASS X—SWEEPSTAKES.

Open to all. In the awards in this department blood will have the preference only when in the examination, all other qualifications shall be found equal.
Best stallion of any age, Silver Pitcher, worth..... \$100
Best mare of any age, Silver Pitcher, worth..... 75

CATTLE.

CLASS I—DURHAM CATTLE.

Bulls.

Best four years old and over..... \$75
Best three years old and over..... 40
Best two years old and over..... 30
Best one year old and over..... 25
Best bull calf..... 15

Cows.

Best four years old and over..... \$50
Best three years old and over..... 40
Best two years old and over..... 30
Best one year old and over..... 20
Best heifer calf..... 15

Devons, Herefords, Alderneys, Ayrshires and Holderness—same premiums as for Durhams.

CLASS II—GRADED CATTLE.

Bulls.

Four years old and over..... \$40
Three years old and over..... 30
Two years old and over..... 20
One year old and over..... 15
Bull calf..... 10

Cows.

Best four years old and over..... \$30
Best three years old and over..... 20
Best two years old and over..... 15
Best one year old..... 10
Best heifer calf..... 5
Best herd of cattle of any one breed, not less than ten, owned by one person..... \$150

CLASS III—SWEEPSTAKES.

Best bull of any age or stock, Silver Pitcher, worth..... \$100
Best cow of any age or stock, Silver Pitcher, worth..... 75
Best bull and five of his calves under one year..... 100

SHEEP.

CLASS I—FINE WOOL SHEEP.

Best ram two years old and over..... \$50
Best ram under two years..... 40
Best five ram lambs..... 30
Best three ewes two years old and over..... 50
Best three ewes under two years..... 30
Best five ewe lambs..... 20

CLASS II—LONG WOOLED SHEEP.

Best ram two years old and over..... \$50
Best ram under two years..... 40
Best five ram lambs..... 30
Best three ewes two years old and over..... 50
Best three ewes under two years..... 30
Best five ewe lambs..... 20

CLASS III—MEDIUM WOOL SHEEP.

Best ram two years old and over..... \$40
Best ram under two years..... 30
Best five ram lambs..... 20
Best three ewes two years old and over..... 40
Best three ewes under two years..... 20
Best five ewe lambs..... 10

CLASS IV—SWEEPSTAKES.

Best ram and ten of his lambs..... \$100
Best ram of any age or breed..... 75
Best ewe of any age or breed..... 50
Best pen of ewes of any age or breed, not less than five..... 75

CLASS I—CASHMERE AND ANGORA GOATS.

Best thoroughbred buck..... \$50
Best thoroughbred ewe..... 40
Best pen of five kids..... 20

CLASS II—GRADES.

Best buck and ten of his kids..... \$75
Best pen of ten belonging to one owner..... 40

SWINE.

Best boar two years old and over..... \$50
Best boar under two years..... 30
Best breeding sow two years old and over..... 20
Best breeding sow one year..... 10
Best sow six months and under one year..... 20
Best pen of six pigs five months and under ten..... 40
Best pen of ten pigs of any age or breed belonging to any one owner..... 50

POULTRY.

CLASS I.

Best lot of white or gray Dorkings..... \$5
Best lot of black Spanish..... 5
Best lot of black Poland..... 5
Best lot of Jersey Blues..... 5
Best lot of Sumatra game..... 5
Best lot of light Bantams..... 5
Best lot of English game..... 5
Best lot of any other distinct variety..... 5
Best lot of turkeys..... 5
Best lot of ducks, any good variety..... 5
Best lot of geese..... 5
Best lot of Guinea fowls..... 5

SECOND DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

Machinery, Implements, Etc.

Models in Classes I, II, III and IV cannot compete with full-sized machines.
All machinery, as far as practicable, to be exhibited in motion.
All articles named in Classes I, II, III, IV, V, VI and VII of this department, if of California manufacture, will receive the premium offered and diploma; if not, they will be awarded a diploma only.

CLASS I—MACHINERY, ENGINES, ETC.

Best display of general machinery from one shop..... \$50
Best light portable prospecting mill for reducing quartz..... 25

Best concentrator for copper ores..... 25
Best grinding and amalgamating pan combined..... 25
Best turbine wheel (Cal. manufacture)..... 25
Best quartz crusher (Cal. manufacture)..... 25
Best steam engine (Cal. manufacture)..... 50
Best portable steam engine (Cal. manufacture)..... 25
Best portable sawmill..... 20
Best saw gummer..... 2
Best self-setting sawmill head block..... 5
Best stave machine..... 5
Best shingle machine..... 5
Best lath machine..... 5
Best hoop machine..... 5
Best molding machine..... 5
Best mortising machine..... 5
Best sash machine..... 5
Best tenoning machine..... 5
Best scroll sawing machine..... 5
Best wood turning lathe..... 5
Best iron planing machine..... 10
Best wood planing machine..... 10
Best water wheel..... 10
Best fire extinguisher..... Diploma
Best gas machine..... Diploma
Best self-generating gas burner..... Diploma
Best machine for the manufacture of screwed boots and shoes..... Diploma
Best machine for securing gold from quartz (Cal. manufacture)..... \$25
Best machine for reducing cement and securing the gold (Cal. manufacture)..... 25
Best diamond drill..... Silver Medal

CLASS II—AGRICULTURAL MACHINES. (FIRST DIVISION.)

Best display of agricultural machinery by any one house (Cal. manufacture)..... \$50
Best thrashing machine..... Diploma
Best sweep horse power (Cal. manufacture)..... \$10
Best endless chain horse power (Cal. manufacture)..... 10
Best thrashing machine, operated by endless chain power..... 10
Best circular sawmill, operated by horse power..... 10
Best log cross-cut sawmill, horse or steam power..... 10
Best ditching machine..... 10
Best clover huller and cleaner..... 5
Best hemp and flax dressing machine..... 10
Best cider mill and press..... 10
Best horse hay rake..... 10
Best hay and straw cutter..... 5
Best hay press..... 20
Best power corn sheller..... 5
Best hand corn sheller..... 5
Best corn husker from stalks..... Diploma
Best corn husker, ears only..... Diploma
Best lawn mower..... \$5
Best goopher trap..... 5
Best post hole auger..... 5
Best well auger..... Diploma and 5
Best vegetable washer..... 5
Best vegetable cutter..... 5
Best lawn sprinkler..... 5

CLASS III—AGRICULTURAL MACHINES. (SECOND DIVISION.)

Best header (Cal. Manufacture)..... \$50
Best wheat drill (two horses)..... 10
Best wheat drill (one horse)..... 5
Best grain broadcast sowing machine..... 10
Best machine for cutting and shocking corn..... 5
Best clover seed harvester..... 5
Best self-raking and reaping machine..... 10
Best reaping machine..... 10
Best mowing machine..... 10
Best combined reaper and mower..... 10
Best display of reaping and mowing machine knives..... 5
Best hay pitching machine..... 5
Best corn planter (horse power)..... 5
Best corn planter (hand)..... 2
Best potato planter..... 5
Best potato digger..... 5
Best field roller and crusher..... 10
Best harrow..... 5
Best one-horse corn cultivator..... 5
Best two-horse corn cultivator..... 10
Best horse hoe..... 5
Best double shovel plow..... 5
Best ramie cleaning machine..... 20

CLASS IV—AGRICULTURAL MACHINES (THIRD DIVISION.)

Best smut machine..... \$10
Best farm feed mill..... 10
Best fanning mill..... 5
Best flour packing machine..... 5
Best self-regulating windmill..... 15
Best stock scales for general purposes, to be set up by exhibitor, and be used by the Board during the Fair, free of charge..... 25
Best platform scales..... 5
Best stump extractor..... 10
Best brick machine..... 10
Best drain tile machine..... 10
Best farm gate..... 15
Best beehive (without bees)..... 3
Best refrigerator..... 5
Best agricultural boiler..... 5
Best portable fence..... 20
Best ornamental fence..... 10
Best economical fence for tile land..... 25
Best grain separator..... Diploma

CLASS V—TOOLS AND HOUSEHOLD IMPLEMENTS.

Best display of haying and harvesting tools..... \$20
Best set of draining tools..... 5
Best farm road scraper..... 2
Best garden seed drill..... 2
Best cheese press..... 10
Best cheese vat, with heater attached..... 10
Best cheese shelf model..... 15
Best churn..... 10
Best butter worker..... 5
Best cabbage cutter..... 2
Best sausage meat cutter and stuffer..... 5
Best washing machine..... Diploma and 5
Best clothes wringer..... Diploma
Best mangle or ironing machine..... 5
Best clothes horse, to occupy the least space..... 10
Best well pump..... 10
Best apparatus for raising water for irrigating purposes..... 20
Best apparatus for raising water for mining purposes..... 20
Best egg carrier..... 5
Best milk cooler..... 10
Best fruit drying house (model)..... 15
Best fruit gatherer..... 3

CLASS VI—PLOWS.

Best steam plow, to be tested to the satisfaction of the Committee, and its utility fully demonstrated..... \$200
Best two-gang plow..... 40
Best plow for general purposes..... 10
Best stubble plow..... 10
Best sod plow..... 10
Best steel plow..... 10
Best cast iron plow..... 10
Best subsoil plow..... 10
Best sidehill plow..... 5
Best one-horse plow..... 5
Best mule or blind ditching plow..... 10
Best open ditching plow..... 10
Best dynamometer..... 10

The Board will furnish to exhibitors suitable grounds for practically testing their plows, under the direction of the Awarding Committee; also a dynamometer for testing the draft of the several plows tried.

CLASS VII—VEHICLES.

Best two-horse family carriage..... Diploma and \$30
Best one-horse family carriage..... Diploma and 25
Best top buggy..... Diploma and 20
Best two seated open carriage..... Diploma and 20
Best trotting wagon..... Diploma and 15

Best farm wagon for general purposes..... 15
Best spring market wagon..... 15
Best cart..... 5
Best street goods wagon..... 5
Best wagon or carriage brake..... 5
Best carriage or cab for children..... 5
Best display of carriage wheels, hubs, etc..... 10
Best assortment of carriage material and trimmings..... Diploma
Best carriage springs..... Diploma and \$10
Best harness..... 10
Best exhibition of wagon and carriage wheels made of California grown timber..... 15

THIRD DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

Textile Fabrics and Materials From which they are made.

Articles to be exhibited by or for the manufacturer, and articles which have heretofore received a premium to be excluded from competition.

CLASS I.

Best exhibition of silk goods by one factory..... \$50
Best display of woolen goods by one manufactory..... 50
Best ten yards woolen cloth..... 5
Best ten yards cassimere..... 5
Best ten yards satin..... 5
Best ten yards jean..... 5
Best ten yards cloth of flax cotton..... 5
Best piece cotton sheeting..... 5
Best ten yards flannel..... 5
Best fifteen yards woolen carpet..... Silver Medal
Best fifteen yards tow cloth..... \$5
Best ten yards linen..... 20
Best ten yards linen diaper..... 10
Best ten yards kersey..... 5
Best hearth rug..... 5
Best double carpet coverlet..... 5
Best pound linen sewing thread..... 5
Best shawl..... 5
Best Mackinac blanket..... 5
Best pair woolen blankets..... 5
Best stocking yarn..... 3
Best olivcloth table cover..... 5
Best display of cordage..... Silver Medal
Best ten yards rag carpet..... \$10
Best exhibition of burlaps and material of which it is made..... Silver Medal
Best exhibition of carpets and rugs..... \$20
Best pair woolen knit stockings..... 3
Best pair cotton knit stockings..... 3
Best pair of misses under twelve years of age..... 5
Best pair of woolen stockings by misses under twelve years of age..... 5
Best linen handkerchiefs..... 5
Best netting..... 3
Best worsted knit stockings..... 3
Best woolen shawl..... 3
Best woolen knit drawers..... 5
Best woolen knit shirt..... 5
Best foot mats..... 3
Best straw hat..... 5
Best straw bonnet..... 5
Best grass bonnet..... 5
Best grass hat..... 8
Best gentlemen's shirt..... Silver Medal
Best knit bedspread..... \$5
Best wave bedspread..... 5
Best ten pounds dressed flax..... 10
Best five pounds flax cotton..... 10
Best five pounds flax yarn..... 5
Articles exhibited by misses under ten years of age, entrance free.
Best exhibition of shoulder braces and corsets..... Silver Medal
Best exhibition of neckties and bows..... Silver Medal
Best exhibition of naval and military goods and regalia..... Silver Medal
Best display of dry goods..... \$20
Best display of fancy goods..... 20

CLASS II—MANUFACTURERS OF LEATHER, RUBBER AND PAPER.

Best exhibition of traveling trunks, valises and bags..... Silver Medal and \$10
Best carpet sack..... 5
Best set of carriage harness..... 10
Best set of saddle harness..... 10
Best display of leather..... 10
Best display of saddles and bridles..... 10
Best display of harness..... 5
Best display of saddletrees..... 5
Best display of shoe lasts, pegs and lasting machine..... 5
Best pair of dress boots..... 5
Best pair of heavy boots..... 5
Best pair of gent's dress shoes..... 5
Best pair of Congress gaiters..... 5
Best pair of ladies' gaiters..... 3
Best pair of ladies' slippers..... 3
Best pair of boots..... 3
Best display of bound account books Silver Medal and 5
Best display of paper..... 5
Best display of paper hangings and borders..... 5
Best silk hat..... 5
Best soft hat..... 5
Best exhibition of gentlemen's clothing..... \$10
Best display of printing..... 10
Best exhibition of men's and boys' Silver Medal
Best display of men's and boys' boots, shoes, gaiters, etc..... Silver Medal
Best display of ladies' and girls' boots, shoes and gaiters..... Silver Medal
Best display of rubber hose and belting..... Silver Medal
Best display of leather hose and belting..... Silver Medal

CLASS III—NEEDLE, SHELL AND WAX WORK, CLOTHING, HATS, CAPS, FURS, ETC.

Best display of children's and ladies' clothing (Cal. made)..... \$25
Best hand sewing made by miss under twenty years of age—not less than four pieces..... Silver Medal
Best ottoman cover..... \$5
Best table cover..... 5
Best fancy chair cushion and back..... 5
Best woolen shawl..... 5
Best crocheted shawl..... 5
Best lampstand mat..... 3
Best ornamental needlework..... 5
Best silk embroidery..... 5
Best embroidered sofa cushion..... 5
Best embroidered table spread..... 5
Best embroidered dressing gown..... 5
Best embroidered lady's robe..... 5
Best embroidered lady's dress..... 5
Best embroidered children's clothes..... 5
Best embroidered undersleeves..... 3
Best embroidered lady's collar..... 3
Best embroidered handkerchief..... 3
Best chenille embroidery..... 5
Best embroidery with beads..... 5
Best tatting collar..... 3
Best worked veil..... 3
Best worked handkerchief..... 3
Best silk bonnet..... 5
Best velvet bonnet..... 5
Best knit cloak..... 5
Best exhibit of men's clothing..... 10
Best exhibit of boys' clothing..... 5
Best exhibit of men's hats and caps..... Silver Medal
Best collection of furs..... \$25
Best assortment leather gloves and mittens..... 25
Best variety of linen embroidery..... 10
Best variety of artificial flowers..... 10
Best specimen wax flowers..... 10

Best specimen wax fruit.....	5
Best and largest variety of wax fruit.....	10
Best specimen of moss or lichen work.....	5
Best specimen cone work.....	5
Best specimen leaf work.....	5
Best specimen flower work.....	5
Best specimen shell work.....	5
Best braid of straw or grass.....	5
Best specimen of braid work.....	5
Best embroidered picture.....	10
Best white quilt.....	5
Best worked quilt.....	5
Best silk quilt.....	5
Best patchwork quilt.....	5
Best children's afghan.....	5
Best display of millinery.....	20
Best preserved natural flowers.....	Silver Medal
Best wax work statuary.....	\$10

FOURTH DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

MECHANICAL PRODUCTS.

All products of industry competing for premiums are to be exhibited by or for the maker or improver or inventor.

CLASS I—WORKED METALS.

Best display of copper work.....	Diploma and \$20
Best display of brass work.....	Diploma and 20
Best display of axes.....	5
Best display of locks.....	5
Best display of door trimmings.....	5
Best display of window trimmings.....	5
Best display of window blind or shutter trimmings.....	5
Best display of saddlers' hardware.....	5
Best display of plumbers' goods and ware.....	Diploma and 10
Best display of gas chandeliers and burners.....	10
Best display of lamps.....	10
Best display of general hardware.....	10
Best display of iron and steel.....	5
Best display of iron fencing, including post.....	10
Best display of mechanics' tools.....	10
Best display of table cutlery.....	5
Best display of pocket cutlery.....	5
Best display of silverware.....	25
Best display of Britannia ware.....	5
Best display of clocks.....	10
Best display of kitchen utensils of brass or copper.....	10
Best display of kitchen utensils of tin.....	5
Best circular saws.....	5
Best mill saws.....	5
Best hand saws.....	5
Best display of files.....	5
Best burglar and fireproof safe.....	20
Best pruning shears.....	5
Best pruning knives.....	5
Best milk cans.....	5
Best samples block tin pipe.....	5
Best exhibition lead tip.....	5
Best exhibition anti-friction metal.....	5
Best exhibition of shot.....	5
Best display of wire goods.....	10

CLASS II—STOVES, CASTINGS, ETC.

Best cooking stove for wood.....	\$5
Best cooking stove for coal.....	5
Best parlor stove.....	5
Best gas or oil stove.....	5
Best warming furnace or other apparatus.....	5
Best cooking range.....	10
Best parlor grate.....	3
Best pair ornamental iron vases.....	3
Best specimen of marbleized iron.....	3
Best specimen of marbleized stone.....	5
Best specimen of marbleized wood.....	5
Best display of hollow iron ware.....	5
Best ornamental statuary.....	5
Best ornamental fruit and flower stand.....	5
Best church bells.....	20
Best farm bell.....	5
Best chime of bells.....	5
Best farmers' cauldrons or steamers.....	5
Best portable range.....	5
Best laundry stove.....	5
Best gas and water pipes.....	Diploma
Best water and steam gates.....	Diploma
Best asphaltum pipes.....	Diploma
Best metallic burial case.....	Diploma
Best assortment of Japanese ware.....	Diploma
Best assortment of bathing tubs.....	Diploma

CLASS III—MUSICAL INSTRUMENTS, CABINET

Best grand or semi-grand piano forte.....	\$20
Best boudoir piano.....	20
Best square piano.....	20
Best parlor piano.....	10
Best dressing bureau.....	10
Best sofa.....	10
Best lounge.....	5
Best extension table.....	5
Best office chair.....	5
Best of parlor chairs.....	10
Best center table.....	5
Best pair of side tables.....	5
Best set of parlor furniture.....	20
Best display of furniture.....	20
Best display of mattresses.....	5
Best writing desk.....	5
Best book case.....	5
Best wardrobe.....	10
Best sick chair or couch.....	5
Best school furniture.....	10
Best spring bed.....	5
Best set of bedroom furniture.....	10
Best billiard table.....	10
Best display of upholstery.....	10
Best office desk.....	5

CLASS IV—WOODEN WARE (CAL. MANUFACTURE.)

Best display of cedar ware.....	\$5
Best display of pine ware.....	5
Best display of oak ware.....	5
Best display of window shades.....	5
Best display of window blinds.....	5
Best display of willow ware.....	10
Best display of splitwood baskets.....	3
Best display of pine, oak or walnut doors.....	10
Best display of turning-lathe work.....	5
Best display of osier willow.....	5
Best display of wooden ware.....	25
Best exhibition of broom corn, brooms and brushes.....	5
Best assortment of hair brushes.....	5
Best gilt frames.....	5
Best sample of twist mouldings.....	5
Best display of fancy mouldings and scroll sawing.....	5
Best wood carpeting.....	5
Best assortment of cooper's ware.....	15

CLASS V—PHILOSOPHICAL, SPORTING, SURGICAL, DENTAL, DRAWING, PAINTING, SURVEYING AND LEVELING INSTRUMENTS AND APPARATUS, ETC., OF FINE WORKMANSHIP, EXHIBITED BY MAKER—AMERICAN MANUFACTURE.

Best surgical instruments.....	Diploma
Best set of optical instruments.....	Diploma
Best dentist's instruments.....	Diploma
Best set of mathematical and philosophical instruments.....	Diploma
Best specimens dentistry.....	Diploma
Best theodolite.....	Diploma
Best level.....	Diploma
Best surveyor's compass.....	Diploma
Best achromatic telescope.....	Diploma
Best reflecting telescope.....	Diploma
Best optical apparatus.....	Diploma
Best balance.....	Diploma

Best thermometer.....	Diploma
Best barometer.....	Diploma
Best electro-magnetic apparatus.....	Diploma
Best electric telegraph.....	Diploma
Best electric machine.....	Diploma
Best galvanic battery and apparatus.....	Diploma
Best set of drawing instruments.....	Diploma
Best chronometer.....	Diploma
Best clock (eight days).....	Diploma
Best specimens of Argentine or Britannia ware.....	Diploma
Best turned and cast Britannia.....	Diploma
Best double barrel shot gun (Cal. make).....	\$5
Best sporting rifle (Cal. make).....	5
Best breechloading shot gun (Cal. make).....	5
Best game bag (Cal. make).....	3
Best and largest display of firearms (Cal. make).....	10

CLASS VI—CHEMICALS (CAL. MANUFACTURE.)

Best Prussian blue.....	\$5
Best copal varnish.....	5
Best glue.....	5
Best prussiate of potash.....	5
Best linseed oil (five gallon).....	10
Best white lead.....	5
Best display of soap.....	Silver Medal
Best display of candle (Cal. make).....	\$10
Best specimen of lard oil.....	5
Best five gallons of castor oil.....	10
Best display of potash, saleratus, pearlash and other alkalis.....	5
Best display of writing fluid.....	2
Best display of blacking.....	3
Best display of lubricating petroleum.....	5
Best display of illuminating petroleum.....	5
Best samples of paint (Cal. manufacture).....	5
Best hair restorer (to be tested).....	5
Best stove polish.....	5
Best bleaching soap.....	Diploma

CLASS VII—GLASS, CROCKERY, STONEWARE, BRICKS AND TILES—AMERICAN MANUFACTURE.

Best specimen Rockingham ware.....	Diploma
Best stoneware.....	Diploma
Best specimen ground glass.....	Diploma
Best specimen stained glass.....	Diploma
Best water pipe of water lime.....	Diploma
Best sample drain tile.....	\$5
Best roofing tile.....	5
Best flooring.....	5
Best looking glass.....	Diploma
Best plate glass.....	Diploma
Best window glass.....	Diploma
Best flint glass.....	Diploma
Best bottle glass.....	Diploma
Best bottles, green glass.....	Diploma
Best vials, green glass.....	Diploma
Best tincture and other stoppered bottles and vials.....	Diploma
Best demijohns.....	Diploma
Best carboys.....	Diploma
Best terra cotta.....	Diploma
Best fire bricks.....	\$3
Best pressed bricks.....	Diploma
Best pottery, various kinds.....	Silver Medal
Best display of stoneware.....	\$10
Best display of glassware.....	10
Best display of queensware.....	5
Best dressed stone.....	5
Best mill stone.....	5
Best barrel common salt.....	3
Best sack of table salt.....	3
Best barrel of lime.....	5
Best hydraulic cement.....	5
Best samples of stained glass.....	5
Best samples of ground and cut glass.....	5
Best display of Cal. marble.....	20

CLASS VIII—MINERALS, FOSSILS, BIRDS, FISHES, ETC.

Best set of useful minerals of California, including coals of California, iron ores of California, marbles of California, sandstones of California, marls of California, peats of California, soils of California, salt waters of California, minerals of California, potter's clay of California, fire clay of California, burr stones of California, gypsum of California.....	\$20
Best collection of minerals, illustrating the geology of California.....	Silver Medal
Best collection illustrating the ornithology of California.....	Silver Medal
Best collection of natural fishes, living or dead.....	Silver Medal
Best suit of crystallized minerals of California.....	Silver Medal
Best suits of fossils of California.....	Silver Medal
Best suits of the vegetable kingdom, including the woods and most useful plants, and native grasses of California.....	Silver Medal
Best suit of the animal kingdom, including insects injurious to the farmer.....	Silver Medal

FIFTH DEPARTMENT.

Most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

AGRICULTURAL PRODUCTS.

Farm Products, Food, Condiments, Etc.

CLASS I—SILK.

Best exhibition of the silk business, from the nut-berry tree to the silk cocoon, including the feeding of the worms, their eggs, etc.....	\$50
For the greatest number of useful forest trees planted in permanent plantation during the year in good growing condition.....	50
Samples of the above trees shall be exhibited at the Fair, and a full statement of the varieties planted and mode of cultivation and distance apart shall be filed with the Secretary, at time of entry. Also satisfactory proof as to the number or trees planted and their condition.	

CLASS II—FLOUR AND GRAIN.

All articles in this department must be exhibited by or for the producer, and no premium will be awarded to any article that has previously drawn a premium of the Society.....	
Best sack wheat flour (California manufactured and California wheat).....	Silver Medal
Best two bushels of wheat of the Chile variety.....	\$10
Best two bushels of wheat of the Australian variety.....	10
Best two bushels of the Club variety.....	10
Best two bushels any other variety.....	10
The premium wheat to become the property of the State Board of Agriculture.....	
Best sample of rye, not less than two bushels.....	\$10
Best sample of oats, not less than two bushels.....	5
Best sample of barley, not less than two bushels.....	5
Best sample of buckwheat, not less than one-half bushel.....	5
Best sample of flax seed, not less than one-half bushel.....	5
Best sample hops, not less than twenty-five pounds.....	5
Best sample of timothy, not less than one-half bushel.....	5
Best sample of clover seed, not less than one-half bushel.....	5
Best sample blue grass seed, not less than one-half bushel.....	5
Best sample of red top seed, not less than one-half bushel.....	5
Best sample orchard grass seed, not less than one-half bushel.....	5
Best bushel yellow corn.....	5
Best bushel white corn.....	5
Best bushel early corn.....	5
Best exhibit garden seeds of California production, not less than twenty-five varieties, not over one year old.....	10

Evidence must be presented showing that the grain, vegetables and products have been grown by the exhibitor.

CLASS III—VEGETABLES, ROOTS, ETC.

All articles in this class are to be raised by the exhibitor except the table or collection of vegetables.....	
Best half bushel red potatoes.....	\$5
Best half bushel white potatoes.....	5
Best half bushel of any other variety.....	5
Best and greatest variety of Irish potatoes, half peck of each variety.....	10
Best half bushel sweet potatoes.....	5
Best twelve parsnips.....	3
Best twelve carrots.....	3
Best six long blood beets.....	3
Best six turnip beets.....	3
Best six sugar beets.....	3
Best peck tomatoes.....	3
Best six drumhead cabbages.....	3
Best six heads of red Dutch cabbage.....	3
Best six heads of any other variety.....	3
Best three heads cauliflower.....	3
Best three heads of broccoli.....	3
Best six heads of lettuce.....	3
Best half peck of red onions.....	3
Best half peck of yellow onions.....	3
Best half peck of white onions.....	3
Best half peck of peppers for pickling.....	3
Best twelve roots of salsify.....	3
Best six stalks of celery.....	3
Best six Hubbard squashes.....	3
Best six crookneck squashes.....	3
Best six crookneck squashes.....	3
Best and largest pumpkin.....	5
Best dozen of sweet corn.....	3
Best three mountain sweet watermelons.....	3
Best three watermelons of any other variety.....	3
Best three green-fleshed muskmelons.....	3
Best three yellow-fleshed muskmelons.....	3
Best six cucumbers.....	2
Best half peck Lima beans, in pod.....	2
Best half peck white beans, dry.....	2
Best half peck kidney bush beans, in pod.....	2
Best half peck pole beans, other than Lima, in pod.....	2
Best half peck field peas, dry.....	2
Best half peck garden peas, dry.....	2
Best half peck castor oil beans.....	5
Best and greatest variety of peas, dry.....	5
Best half peck gherkin cucumbers.....	3
Best three purple egg plants.....	5

TABLE OR COLLECTION OF VEGETABLES.

For the best table of the following varieties of vegetables exhibited by one person:
Parsnips, carrots, beets, tomatoes, cabbage, cauliflower, broccoli, lettuce, onions, peppers, salsify, celery, squashes, sweet corn, watermelons, muskmelons, cantaloupes, cucumbers, Lima beans in pod, string beans, egg plants, water cress, parsley, spinach, radishes, turnips, potatoes..... \$30

For the second best table of same varieties..... 20

CLASS IV—FLOWERS.

Best and largest collection of flowering plants in bloom.....	\$25
Best collection of ornamental foliage plants.....	25
Best collection of new and rare plants.....	15
Best collection of roses in bloom.....	15
Best collection of fuschias in bloom.....	15
Best display of cut flowers.....	10
Best collection of Australian plants.....	10
Best display of bouquets.....	10
Best collection of plants suitable for greenhouse, conservatory, and window culture.....	15
Best display of hanging baskets containing plants.....	10

CLASS V—CHEESE.

Best cheese one year old and over.....	\$15
Best cheese under one year old.....	10
For best and largest display of cheese.....	Diploma and 20

CLASS VI—BUTTER, BREAD, ETC.

Butter.

Best lot ten pounds of butter, in rolls.....	\$10
Best tub or firkin, not less than twenty-five pounds, at least three months old.....	15

Bread and Cereal Food.

Best four loaves of bakers' bread, not less than forty eight hours old.....	\$3
Best pilot bread.....	2
Best biscuit.....	2
Best soda biscuit.....	2
Best crackers, butter.....	2
Best crackers, sweet.....	2
Best crackers, Boston.....	2
Best domestic corn bread.....	5
Best domestic rye bread.....	5
Best domestic brown bread.....	5
Best domestic wheat bread.....	5

CLASS VII—HONEY, PRESERVES, PICKLES, ETC.

Best ten pounds honey.....	\$5
Largest and best variety of canned fruits, not less than two cans of each variety.....	20
Largest and best variety of jelly, in glass.....	20
Largest and best variety of preserves, in glass.....	10
Largest and best variety of pickles, including fruits.....	15
Best brandid peaches.....	5

Sugar and Syrup.

Best one hundred pounds made from sugar beet.....	\$20
Best one hundred pounds made from cane.....	20
Best one hundred pounds made from melons.....	20
Best five gallons syrup from either of the above named articles.....	10

SIXTH DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

For the purpose of competing for the Agricultural Society's Gold Medal, the articles exhibited in the Vine Growers' Fair, will be considered in the 6th Department.

FRUITS.

CLASS I—GREEN FRUITS.

Apples.

Best display.....	\$30
Best twelve varieties.....	15
Best six varieties.....	10
Best three varieties.....	5

Pears.

Best display.....	\$30
Best twelve varieties.....	15
Best six varieties.....	10
Best three varieties.....	5

Peaches.

Best display.....	\$15
Best six varieties.....	10
Best one variety.....	5

Plums.

Best display.....	\$15
Best five varieties.....	10
Best one variety.....	5

Figs.

Best green figs.....	\$5
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Tropical Fruits.

Best display of tropical fruits.....	\$20
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Oranges.

Greatest number and best specimens.....	\$5
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Lemons.

Greatest number and best specimens.....	\$5
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Seedling Fruit.

Best display of seedling fruits.....	\$10
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General Display.

Best general display of fruits, embracing best and greatest varieties.....	\$50
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CLASS II—DRIED AND PRESERVED FRUITS, NUTS, ETC.

Best twenty-five pounds dried apples.....	\$20
Best twenty-five pounds dried pears.....	20
Best twenty-five pounds dried peaches.....	20
Best twenty-five pounds dried plums.....	20
Best twenty-five pounds dried apricots.....	20
Best twenty-five pounds dried nectarines.....	20
Best ten pounds dried figs.....	10
Best exhibition of dried berries in variety.....	10
Exhibitors of dried fruits must furnish written statement of manner of drying and treatment in full, from time of picking to placing on exhibition.	

Cultivated Nuts.

Best half peck English walnuts.....	\$5
Best half peck soft-shelled almonds.....	5
Best half peck peanuts.....	3

Best package for shipping small fruit.....	\$5
Best package for shipping grapes.....	5
Best package for shipping peaches.....	5
Best package for shipping plums.....	5
Best package for shipping pears.....	5
Best plan or model of a fruit drying house.....	20

SEVENTH DEPARTMENT.

For the most Meritorious Exhibition in this Department, the Society's GOLD MEDAL.

FINE ARTS.

CLASS I—PAINTINGS, DRAWINGS, ETC.

Best exhibition of portrait paintings in oil.....	\$40
Best specimen of portrait painting.....	20
Best exhibition of landscape painting in oil.....	40
Best specimen of landscape painting in oil.....	20
Best exhibition of animal painting in oil.....	40
Best specimen of landscape painting in water colors.....	10
Best specimen fruit painting.....	10
Best exhibition of paintings.....	50
Best exhibition of ivory type.....	10
Best exhibition of photographs.....	10

POULTRY NOTES.

Feeding of Poultry.

Solon Robinson gives the following rules for feeding poultry: "Don't feed too much. Food should never be given to fowls unless they are hungry enough to run crazy after it, and just as soon as they stop running crazy, you stop throwing feed, and never, no never, leave feed lying by your fowls for them to eat at their leisure."

We think this is sensible advice, though it does not accord with the practice of stuffing turkeys with a stick in fattening them. Fowls are great gormandizers, and when they get a chance they will stuff their crops almost to bursting, which cannot be a very healthy practice. When a mischievous boy we have fed them to the fill, just to see them stretch their necks to get it down, and throw it out when their crops would not admit another kernel.

Moreover, the habit of giving much food in a short space of time to poultry is a very bad one. If you notice their habits you will perceive that the process of picking up their food under ordinary, or what we may call the natural condition, is a very slow one. Grain by grain does the meal get taken up, and with the aggregate no small amount of sand, small pebbles, and the like, all of which passing into the crop, assists digestion greatly. But in the "henwife's" mode of feeding poultry, a great heap is thrown down, and the birds allowed to "peg away" at such a rate that their crop is filled far too rapidly, and the process of assimilation is slow, painful and incomplete. No wonder that so many cases of choked craw are met with under this treatment.

A Novel Mode of Feeding.

Another writer gives the following novel mode of fattening, adopted at some of the French poultry establishments: A large circular building, well ventilated, and with the light partially excluded, is constructed and fitted up with cages placed on tiers, with circular shelves revolving on a common central axis. The apparatus is so arranged as to be readily raised, depressed, or rotated, and the cages are so divided as to give each bird a separate stall, containing a perch. The birds are placed with their tails converging to a common centre, while the head of each may be brought in front by a simple rotary movement of the shelf on the central axis. Each bird is fastened to its cell by leathern fetters, which prevents movement except of the head and wings, without occasioning pain. When the feeding time comes, the bird is enveloped in a wooden case, permitting only the head and neck to appear, and which is popularly known as its paletot, or overcoat; by this means all unnecessary struggling is avoided. The attendant, a young girl, seizes the head in her left hand, and gently presses the beak in order to open it; then, with her right, she introduces into the gullet a tin tube about the size of a finger. This tube is united to a flexible pipe communicating with the dish of food, and from which the desired quantity is instantaneously injected into the crop. The feeding process, it is stated, is so short that two hundred birds can be fed by one person in an hour. The food is a liquid paste, composed of Indian and barley meal boiled in milk. It is administered three times a day, in quantities varying according to the condition of each bird.

How to Make Turkeys Useful.

In Normandy, where the Crevecoeurs are principally raised, they have a curious fashion of hatching eggs. As the hens are not inclined to set, and are at best only ordinary mothers, the good woman of the peasantry have a fashion of pressing young hen turkeys into the service. This they do in the following way: Take a female turkey of the preceding year that has never laid, and put her in a basket containing plaster eggs. Cover this basket with a strong linen cloth. It will be from four to six days before she will overcome her natural disinclination to sit, and become attached to the eggs, or as the French have it "take an affection" for them. When the prejudice is entirely overcome, they place the real eggs under, she easily covering eighteen or twenty of them. The covering is removed and the innocent turkey accomplishes the task assigned her without further trouble, save that it is necessary to remove her once a day that she may partake of refreshments. If this is not done, these "setters" sometimes starve to death,

rather than voluntarily leave their charge, so great is this forced affection. After hatching, the little chicks are placed in charge of another turkey, and the mother, supplied with a new lot of eggs, continues her mission." These young turkeys are thus made to hatch three or four "litters" in a season.

Fattening Fowls in France.

The fattening of fowls, says the *Scottish Farmer*, is carried on to a great extent in France. In some localities it is the staple occupation of the females. In three weeks after being penned up, the birds should be ready for market; but they must be in fair condition when cooped, and not more than six months old. Cockerels do not fatten so well as pullets, but if they have been kept apart, the young male birds of all the French breeds are very superior in flavor and delicacy to the Dorking, and must not be despised as table fowls.

In France the food given is buckwheat ground into meal and mixed with milk. Barley and oat meal, and also Indian corn meal, are all good feeding stuffs. Great cleanliness is imperative, and to ensure this in the coop there should be no bottom, but merely rounded spars; the coop, being on legs, is raised above the droppings, which must be removed daily, and sawdust sprinkled underneath. The chickens are fed twice in the 24 hours, early and late, the feeding troughs taken away after each meal, washed and kept sweet, as fowls will not thrive if their food is sour and dirty. Milk may be given as drink; it is supposed to whiten the flesh, and certainly assists in the fattening.

Rice boiled in milk forms a very delicate food, but it is not so fat-forming as the meals before mentioned. Suet, molasses, etc., are often given to produce fat, but it is of too rank a nature to please those who are connoisseurs in poultry. Pure natural food must be best, and no other can be recommended. The feeding house must be kept warm and quiet, the fowls themselves being quietly and carefully treated. In my own establishment fattening is never required; the fowls are fed up from the shell for exhibition, and therefore are always fit (after a fast of 12 hours) for the table, the only risk being of their becoming too fat for laying purposes and successful breeding.

ONIONS FOR POULTRY.—It seems strange that this esculent is so little appreciated, not only for use by the human family, but for poultry. Its curative properties do not seem to be understood, or else are much underrated. And as a preventive, also, it has no superior. A few raw onions, chopped up fine and mixed with feed for young chickens, act like a tonic, and are equally good for old fowls. The tops, too, are good. Chop up onion tops and sides for the young turkeys. They are a certain specific against gapes, pip, and other ills that fowldom is heir to. Three times a week is not too often to give them a taste—not merely a taste, but a good bite also. Were the use of green food more common among poultry raisers, we should hear of less cases of cholera, roup, gapes, pip, etc.

If sameness of food will engender disease in man, why not in fowls? Feed your fowls as you do yourself. Give them change, variety. Give them onions mixed with other food at least twice a week. It is better than a dozen cures for chicken cholera.

Fowls exposed to dampness are apt to be troubled with catarrh, which will run to croup if not attended to. Red pepper mixed with soft feed, fed several times a week, will remove the cold. Pulverized charcoal, given occasionally, is a preventive of putrid affections, to which fowls are very subject. Pulverized chalk administered with softer feed will cure diarrhoea. This disorder is caused by want of variety in food, or by too much green food. Garlic placed in water which fowls drink is excellent.

EGGS NOT GOOD FOR YOUNG CHICKENS.—One of the most scientific and successful poultry breeders of Germany, whose experiments we have personally examined, says that young chickens should never be fed with boiled eggs, nor should they have access to water otherwise than mixed with their food, until several days old.

Many people are in the habit of mixing dough with cold water. This is wrong. The Indian meal ought to be cooked, or at least scalded. Many loose their young chickens from neglect to scald the meal, and wonder what the matter was. Poultry is worth too much now to afford to neglect it.

About the Cotswolds.

We refer our readers to the advertisement in another column of this week's issue, headed **IMPORTANT.** Col. Peter Saxe has, within the past two years, been a large importer of full-blooded stock to this State. This he has brought from the famous "Blue Grass" counties of Kentucky, consisting of 23 Durham "Short Horn" bulls and heifers, 210 Cotswold bucks and ewes, and 200 Berkshire pigs.

The above animals are all fully pedigreed, each identified by the number on a metallic label in the ear. The Col. exhibited much of this stock at the State and District Fairs of the past two years and received many premiums on all this stock. On sheep alone, he has taken over four hundred dollars.

We learn that most of his stock is now sold, and has been distributed more or less, into 17 different counties of this State. Col. Saxe is now engaged in this market as a buyer of wool, representing a leading Eastern house—H. Rankin & Co., Troy, New York.

Lusher's Patent Vegetable Cutter.

Our illustration represents a very simple but useful device for slicing all manner of vegetables. It is one of those really excellent little things, that while their cost is but trifling they can hardly be dispensed with when once brought into use. As the knives are tinned, they cannot rust, and yet have a good cutting edge that



LUSHER'S PATENT VEGETABLE CUTTER.

will last for years. They are easily kept clean, as they are made all in one piece, and are perfectly smooth.

All kinds of vegetables can be cut with them, cabbages, potatoes, apples, pears, turnips, carrots, beets, cucumbers, radishes and onions. Six slices are thrown off with every stroke of the hand, so that enough can be prepared for a large family in one minute.

One cutter sent—postage or expressage free—to any address, for \$1 50.

Address, Weister & Co., 17 New Montgomery Street, San Francisco.

Alyske Clover.

Our eastern agricultural exchanges are speaking in great force of the probable value of this newly introduced clover; and if we can rely upon its possessing the merit accorded, it will doubtless become of equal or greater value to the stock growers and bee feeders of the Pacific coast States; for it is said to be, in addition to its value as food for stock, one of the best honey-producing plants known. Unlike the common red clover, the Alyske produces a blossom head, upon which the honey bee feeds as readily as upon the famous honey-producing white clover of the Eastern States. In an English work, "Farmer's Diary," for 1872, is the following in relation to its history and qualities:

"Alyske, or Perennial Hybrid clover, which takes its name from Alyske district, near Stockholm, was first introduced into Sweden. Within the last century, vast improvements in agriculture have enabled

this valuable clover to be brought to great perfection, and it is now held in high estimation by the Swedish farmers, and extensively cultivated by the leading agriculturalists of Great Britain and Ireland. The root is fibrous, and the heads globular. The plant bears a greater resemblance to the white than to the red clover, and may be described as the giant white clover, with flesh-colored heads. The advantages it possesses over every other variety of clover are:—Its perennial, or permanent character, its greatest hardiness (for no winter will kill it), its capability alike of resisting the extremes of drouth and wet, the much greater weight of herbage it produces during the season, and the certainty of a plant when other varieties fail from the land having become clover-sick. Its powers of production are inexhaustible, as is proved by the wonderfully curious formation of the plant, from the single crown of which innumerable heads are continually being produced all through the season, and tillering out laterally over the ground. The hardy nature of the plant is proved by the fact of its thriving by transplanting. A single plant may be taken up and divided into ten or more parts, the fibrous roots just cropped, and each part will produce a luxuriant plant; so that no farmer need hereafter have a patchy piece of clover. Twelve pounds of Swedish Alyske is sufficient to sow an acre."

Craft-Schools Wanted.

To remedy the aimlessness and unfitness for life with which our education leaves our youth, we need more craft-schools, where boys can become practical engineers, chemists, printers, machinists, and even farmers. The machinist would be none the worse if he should spend his evenings over Euclid instead of lager; the blacksmith, if he knew how to drive home and clinch an argument in metaphysics as skillfully as a horse-shoe nail; or the dentist, if he could extract hidden Greek roots with the same facility as grumbling molars. Educated men would dignify any of these employments, and make them sought and not shunned by those worthy to fill them. A man who wants to run an engine ought to be educated for his business, just as much as a lawyer for his profession. We are a patient and long-suffering people, or we would never permit ourselves to be blown up by hundreds by ignorant engineers, who know nothing more of the monsters which they control than enough to feed them with wood and water, and oil up their creaking joints; or suffer ourselves to be sent to our graves by striplings in short jackets, who give us arsenic for paregoric, and strychnine for the elixir of life. The time is coming, and we trust is not far distant, when all these positions of responsibility will be filled by men of education, and can be filled by none others; when ignoramuses will be obliged either to fit themselves for their proposed labors, or seek other employments.—*Scribner.*

California Butter in New York.

In the *Alt's* New York commercial letter of April 20th, we find the following in relation to the recent shipments of California butter to New York as mentioned on pages 201 and 209 of *RURAL PRESS*:

The feature of the week was the arrival of a car load of butter (19,238 lbs.) from San Francisco, consigned to Messrs. T. S. Doremus & Co. and J. S. Martin & Co.; time, 23 days. The excitement attending the arrival of this lot was intense, and the trade were on the tip-toe of anxiety to examine it, as well as to secure a few packages. The condition of the packages, as well as the contents, were excellent, and on the opening of the cases a most beautiful sight greeted the eye, the ends of the well-formed rolls looking very much like enlarged twenty-dollar gold pieces, and forming quite a contrast to our own butter, which had more the appearance of lard. The whole consignment has been nearly disposed of at 40 cents per lb., and the only regret expressed was that there was not more of it, and that it did not arrive earlier. Two car loads (41,102 lbs.) are due in a day or two and will quickly be placed on sale. Had it reached here one month ago, as was intended, full 50 cents per lb. would have been obtained, but as our own butter has come into the market and many dealers had made their contracts they were unable to take hold of it to an extent that they otherwise would have done. Thus far the experiment has proved successful and must encourage large shipments next season.

ONE REASON for the popularity of the *RURAL PRESS* is the fact that it possesses in its columns some attractions for each member of every intelligent family—old and young.

FARMERS IN COUNCIL.

San Jose Farmers' Club and Protective Association.

[Reported for the PACIFIC RURAL PRESS.]

The meeting of last Saturday was, as usual, well attended. Several new rules of order were adopted to facilitate the business of the Club.

The subject selected for the next meeting (May 4th) is "Grain Sacks."

It appears that a ring is formed to control the price of grain sacks and defraud the farmers, and the discussion will probably sift the matter if it accomplishes nothing more.

A subject for the next Saturday following (May 11th) was also selected, viz: "The conveyance route from San José to San Francisco via Alviso."

Arrangements have already been made and a steamer is now running from Alviso to San Francisco, making night trips, and carrying strawberries, vegetables, etc., fresh from the farms, and landing them near the markets, without the rough handling, bruising and delay which has been experienced over the S. P. R. R. route. This has been brought about by a number of the principal farmers in Santa Clara county, combining and pledging their patronage to the steamer. Before this combination of the farmers in self-defence, the railroad managers would not listen to any complaints, but referred them to Wells, Fargo & Co.'s Express Agents, with whom the Company had arranged for the carrying of all such freights. What then cost the farmers \$1 to freight to San Francisco is now sent via Alviso by steamboat for 60 cents, and the commission men get better prices, and are much pleased with the arrangement. Before this move the Railroad Company refused to put on a night train. Now they are not only willing to run a night train, but they have reduced the price of freight to *one-half the cost on the Alviso route*, about one-third the rate formerly exacted. Some of the active citizens of San José are agitating the matter of laying a narrow track railroad to Alviso to connect with the steamboat. Now the freight is all taken to the landing in wagons. The distance from San José to Alviso is about seven miles. There is already a good gravelled road the entire distance. It will be seen from the above that the subject is an interesting one, and there is enough of "principle and interest" involved to stimulate the farmers to action.

The Subject of Taxation,

which had been laid over for two weeks, was declared in order, and J. F. Holloway led in the discussion. He said that the time will come when the people will take such matters in their own hands, instead of being dictated to and controlled by corrupt political rings, and lead blindly by party schemers.

Notwithstanding the late attempt at equalization by assessing property at its full valuation, there is likely to be done a great injustice to the small farmer, whose property consists largely in improvements, while the large land-holder, who had made but little improvement, will return his unimproved land at a low figure, and come off, as before, with light taxes. The worthy and progressive tiller of the soil will have to bear the heaviest burden still. He saw the Assessor assessing chickens at 50 cents each. This he considered "taxation without representation," as the women usually claim the chickens. [Laughter.] He was in favor of equalization and fairness. And he was still in favor of lighter taxes, and this was not likely to be until there were some retrenchments and reforms instituted. So long as the big things are subsidized, and now offices are created for high-salaried officials—so long as corruption funds are necessary and whisky mills control the elections, we are not very likely to pay less taxes. There will be more taxes raised this year than ever before, although the percentage will be smaller under the new valuation. But the very lowest rate of taxation we can hope for, even under the new law, will be much higher than we ought to pay. The high-rate pay that is allowed to all our county officers, and the constantly multiplying dependencies of the government will always keep our taxes up, and it is now high time we commence at the bed-rock to rid our-

selves of the enormous burdens we have to bear. The high-salary system of our State and county governments operates as a direct barrier to a wise and economical administration. The fight for office—in consequence of the high pay—is of such a demoralizing and degrading character that the high-minded, patriotic rich man will not enter the dirty scuffle, while the poor, honest and deserving man has neither the inclination or the means to augment the enormous corruption funds necessary to do the dirty work—getting the favor of the whisky ring and the wire-workers. Thus the government is turned over to a gang of tricksters and political stock-jobbers, whose object is to enrich themselves while they have a chance. Santa Clara county to-day, with its population of a little more than 25,000, pays within a few thousand dollars, as much taxes as did the whole State of Kentucky twenty-five years ago, with its population of over one million people. The highest tax I ever paid there was six cents on the one hundred dollars, while here in our own county, the Treasurer sits in the people's fine Court House, in the people's easy chair, on the people's fine carpets, using the people's books, the people's paper and the people's strong box, and takes six dollars out of every hundred, which we, the people, are compelled, under the penalty of the law, to walk up and hand over to that dignitary. And the Treasurer is only one among the army of overpaid public servants. It is a fact, gentleman, that in this day, when a man's worth is estimated by the size of his bank account, we place these servants of ours so far above us that it is no great wonder that the condition of the humble, honest farmer, mechanic or tradesman, is looked upon with contempt. Then let us get to work like men, like patriots and like citizens of a common country, laboring for the common good, and place our public servants on a common level so far as pay is concerned with the skilled laborer, the intelligent farmer, or the efficient business man, and then, and not until then, will we have good government, honest and capable officers, and taxes that we can afford to pay.

Orrin Dubois wished to know whether, under the new valuation, we are to count property at its real value, or at its fancy value. Are the lands to be taxed all through at what they are worth for agricultural purposes? Right here there is a chance to exercise a nice discrimination. Near our towns particularly, where land is held at unequal values there is much need for some regulation. He did not think it right to tax the farmers' land and crops at fancy prices. Crops are sometimes short, and live stock sometimes depreciates. He once paid \$100 each for some cows, and had to sell them for \$15 each. Property at interest, or such as is likely to appreciate in value, should be taxed at its full valuation. To what extent does the Assessor discriminate?

President Oliver Cottle said that when property of every sort was put at its real value, or *what it will sell for*, and assessed accordingly, we will get at equity better than in any other way, and that there should be no other discrimination than the law.

Mr. Dubois would call attention to the need of manufacturing industries to increase the taxable property. The jealousy existing against laborers, and against capital, is wrong. There is no real antagonism of interests. As sparsely populated places pay the most taxes in proportion he would like to see more population and more property.

Mr. Holloway in reply said that such should be the case, but that under our present corrupt style of political mismanagement it was not so. He contrasted the economical government of some of the sparsely settled States, to the densely populated city of New York, where the people are unmercifully taxed to support corruption.

Benj. Casey was anxious to do something to lessen taxation. He referred to the old debt of this State of some five or six millions which was illegally contracted by corruptionists, and it ought to have been repudiated, but was not. He believed a sinking fund had been provided and it had not come to the surface yet, but the interest had to be paid. He would like to know what becomes of our taxes. We have few good roads and few well supported common schools, but we have to pay all the expenses of extortionate corruption. He told how one candidate to Congress had paid \$2,000 from the *party fund* and got elected, and as much more from his own pocket, the most of which went into the whisky hells. High salaries and big stealings, etc., would make the

Hon. Congressman even. This is what we have arrived at, and we have to be taxed and support a government of just such unprincipled and profligate servants. The appropriations which our State is allowing to encourage enterprises, is nearly always in the interest of speculators. The offer of one dollar for each shade tree planted may be taken advantage of and the State tax be increased to millions of dollars.

J. L. York thought the laws, not the Assessors, ought to discriminate in taxation. All property should be taxed for what it will bring in the market. He contrasted the ponderous machinery of our Republic with the economical workings of a Monarchical Government. We are daily making useless offices for the support of plunderers, and necessity demands that officers' wages should be lessened. He believed in supporting the Government, but not in paying \$500 and \$700 per month to a man, when \$100 would be a fair recompense for his time and trouble. Our country will go back to *Ballyhack* if some remedy is not introduced. He said schools were second only to religion; by some they are placed first, and we cannot do too much for them. He did not believe in money crowding labor, but in fair play and no crowdings.

Mr. Caldwell would simplify our whole political fabric. He would pay no officer above his actual earnings, and would only employ good men. The roads and bridges should all be free, and the farmers should be required to make roads instead of paying for them. Then we would have roads and be money in pocket. Every department of our government should be simplified and purified.

L. F. Chipman would choose our officers and public servants from the best men instead of allowing designing knaves to thrust themselves upon us. Right here lies the secret of all our troubles: In supporting self-nominated men and the choice of the thieving rings. He knew one man to pay \$8,000 to get into office, and then make money without rendering actual service, by hiring a clerk at a reasonable salary; a salary quite as high as the office should ever receive. We are strangled in corruption, and weighed down with taxes, until it is unendurable.

Mr. Holloway made reference to the \$10,000 State School Superintendent as a useless officer. He would support and increase the number and efficiency of common schools by leaving the matter and responsibility where it belongs, with the tax payers and people themselves. Our school trustees are not paid anything and do all the work now, with their hands tied. Make them responsible for something, and do away with the costly trumpery of "official dignity."

Sacramento Farmers' Club.

This club met at the usual hour on Saturday, and being called to order by Vice-President Holland, the Secretary read a letter from C. Myers of Marysville acknowledging the receipt of the club's acceptance of his proposition to have a trial of his subsoil plow under the auspices of the club, and saying he would be on hand. The committee appointed to make the necessary arrangements for team and ground reported that they had agreed on a field near East Park, in the city, and would have a six-horse plow team ready for service. The trial will commence at 2 o'clock P. M. on Saturday, the 4th of May, and will undoubtedly be of a good deal interest to the farmers in the vicinity. The plow to be tried is a two-gang—one of the plows being an ordinary plow, while the other is a subsoiler so arranged that it runs in the furrow made by the other plow at the preceding bout and stirs up the ground to any depth required, and the common plow following covers the earth so stirred and loosened and leaves a furrow ready for the next bout. The Secretary also read a letter from M. Walthal, Secretary of the San Joaquin Farmers' Club announcing the action of the club on the fruit trees dying in many localities of the State. A competent committee has been appointed to give the subject a full examination and report at some future meeting. Attention being called to the sample fruit-box made by Star & Little and presented to the club by Johnson, last week, Johnson remarked that the box had been made with an eye to furnishing a box so cheap that shippers can afford to let the box go with the fruit sold with it and thus save the trouble of returning the boxes. In this case the carrying companies will reduce freight considerably. The boxes are made of mountain fir well seasoned by steaming so that the material is at once light and strong. The ends are made of half inch stuff, while the side, top and bottom about

three sixteenths, the sides being braced by a crossbar. The boxes can be finished at 8 cents each, and, taken altogether, it seems to be a step in the right direction. Rutter presented the Club with a sample of wine cordial made by himself, which being tested by the members, was by general consent pronounced most excellent, and was christened "Rutter's Florin Grape Cordial." Johnson, in behalf of Miller of Alder Creek, presented the club with samples of some most excellent strawberries of the following varieties: Triumph de Grand, Wilson's Albany, Leonard's White and Longworth's Prolific. The Leonard's White is a new and very excellent variety, but will not probably meet with favor by shippers for want of color. On motion it was resolved that at the meeting of the club to be held on Saturday, the 11th of May, the members would invite their wives and lady friends, and that a supply of strawberries and cream should be provided for the occasion by the different members, who have a plenty of these good things. This will be very appropriate, as on that day the subject for discussion is the cultivation of small fruits. The club adjourned to meet at 1 o'clock sharp next Saturday, so as to be on the ground at 2 to witness the plowing trial.

NAPA FRUIT CROP.—Our fruit crop promises to be excellent. The late frosts nipped a great portion of the vineyards in the county, producing great loss, but the damage is nothing like as great as was first reputed. In some places most all of the vines that had been put out were frosted; other sections escaped entirely, and others were only partially frosted. About St. Helena, where the greatest damage was reported, it is now ascertained that only in a few vineyards was the damage anything like 30 per cent. Some young vineyards look as though a fire had passed over them, while others are not touched. Mr. Pellet's vineyard is damaged near 50 per cent., while others adjoining are scarcely injured. Mr. Crabb, of Oakville, informs us that his crop is seriously injured—a third or more. The same is the case with most all the vineyards in that section. But about Yountville the damage is very slight. Mr. Grotzinger's vineyard is scarcely touched, and many of those on the east side of Napa creek, including Mr. Burrage's, Mr. Grisby's, and many others are injured very little. The same may be said of the vineyards about Calistoga, and in Brown's valley. Taken throughout the county, we are safe in saying the injury will not exceed 25 per cent. Many of the vines had not put out, and experienced vine-growers tell us that even those vines entirely frosted will put forth new shoots and produce half a crop. So it will be seen that the statement first made in regard to two-thirds of our crop being destroyed, was premature, and resulted from a sudden scare. Other kinds of fruit are slightly damaged. Probably the almonds are the worst injured, and they not worth noticing. The peaches, plums, apples, etc., are scarcely touched. An unusually large crop is expected.—Reporter, April 20.

RAIN IN SAN JOAQUIN.—Alex. Glenn, who lives on the west side of the San Joaquin river near Grayson, arrived in town this afternoon and brings the welcome intelligence that the rain last night was very heavy in the southwestern part of the valley. It commenced raining at Grayson about 7 o'clock last evening, and rained heavily and almost without cessation until 7 o'clock this morning. When Mr. Glenn left it was still raining along the western side of the valley. The general estimate was that between a half and three-quarters of an inch of rain fell at Grayson during the night. The feeling created by this rain among the farmers up the valley is one of rejoicing, and all are confident that they will now raise a good crop. It is probable that the rain has continued to fall to the west and south of this city during the greater portion of to-day.—Republican, April 20.

FIFTEEN years ago M. L. Dunlap of Champaign, Illinois, set 35,000 one year silver leaf maples, in rows 4 feet apart, making belts 4 rods wide. After a time many were taken up, but enough remained to make a grand forest surrounding the farm. Previous to the planting orchards were thought impracticable, now he has the best orchard in Illinois. The cost of the seedling maples was \$12 per thousand. The golden and white willow will grow faster, and they are quite as valuable, and they can be had here in Greeley at \$2.50 per thousand.—Greeley Tribune.

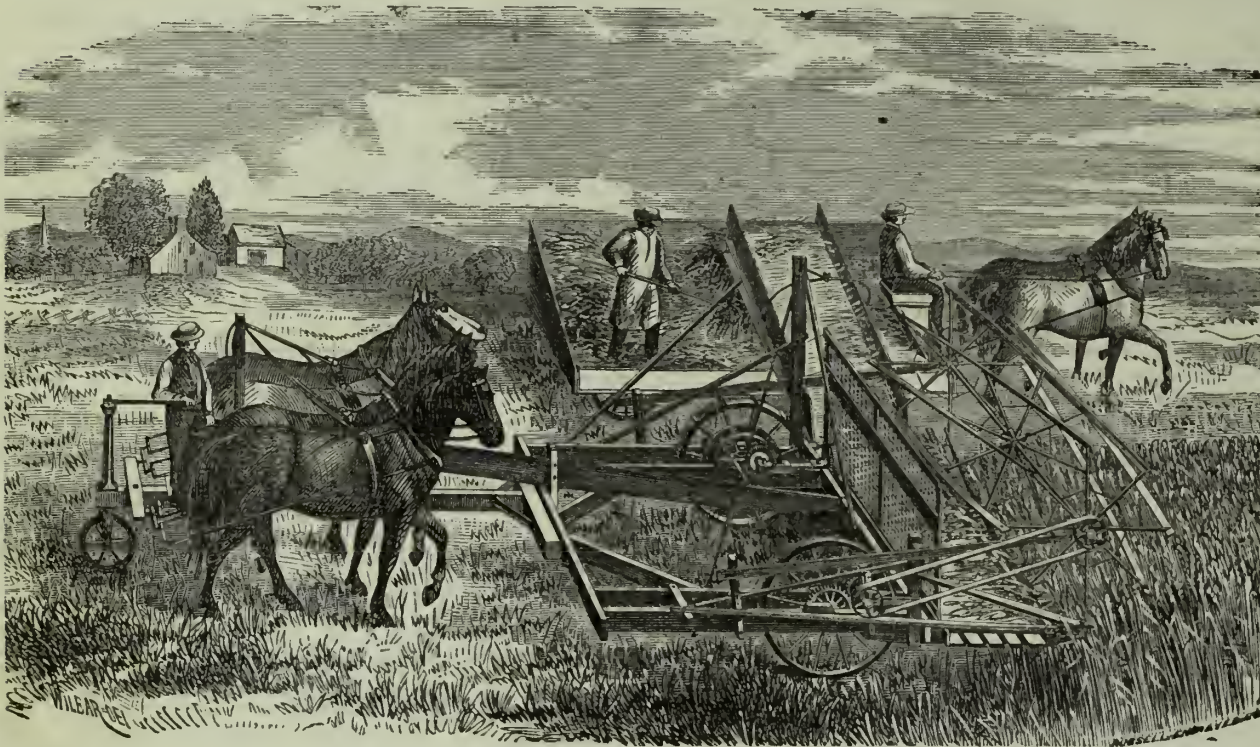
IN THE FIELD AGAIN!

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WITH THE OLD STANDARD

HARVESTING MACHINES,

Hoadley's Portable Threshing Engines,



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Ball's & McCormick's Reapers, Kirby's Combined Mower and Reaper, Etc., Etc.,

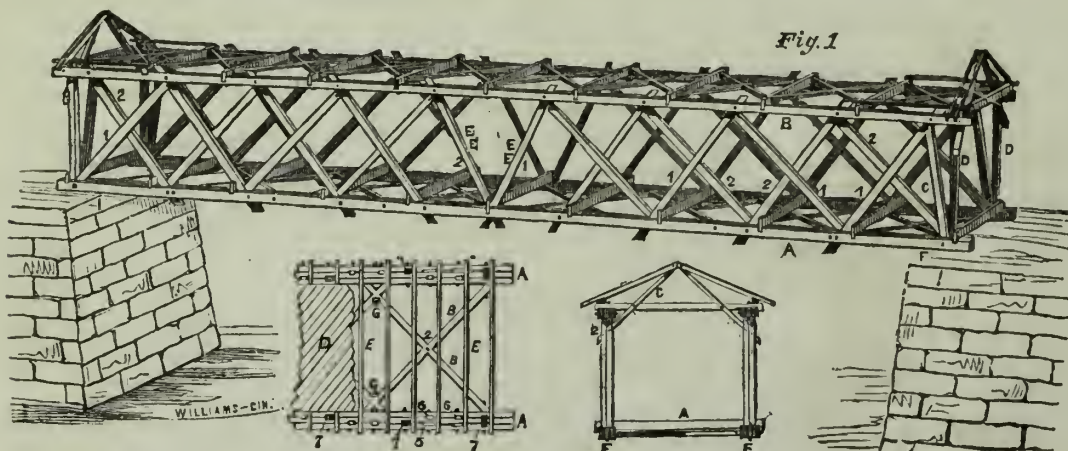
WITH ALL THE LATEST CALIFORNIA IMPLEMENTS, SO JUSTLY PRIZED BY ALL CALIFORNIA FARMERS.

These Machines MUST BE SOLD, and the supply being limited, and prices at first cost, they will be disposed of at an EARLY DAY. Farmers who intend to buy Harvesting Machines for this season, would do well to order now, and make sure of their Machines before the season advances, and the Stock is sold, as it certainly will be before harvesting time. **Don't fail to get our prices before ordering.**

TREADWELL & CO.,

OLD FARMERS' MACHINERY DEPOT, SAN FRANCISCO.

PACIFIC BRIDGE COMPANY,



WORKS NEAR SOUTH POINT MILL, BERRY STREET, SAN FRANCISCO, CAL.

Are Prepared, with Superior Machinery, to Manufacture and Build all kinds of Bridges on Smith's, Howe's, and other Improved Plans. Framing of all kinds done by Machinery.

The Smith Bridges have been thoroughly tested in the East for Three Years, and wherever tried have proved superior to any other Bridge in the following points:

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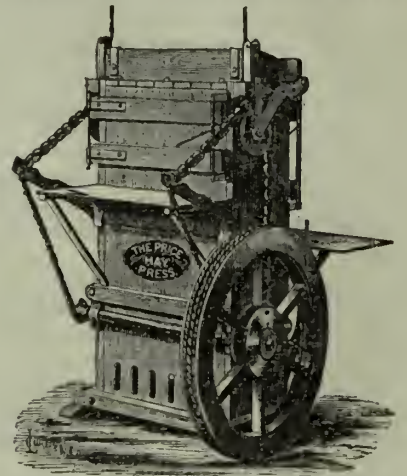
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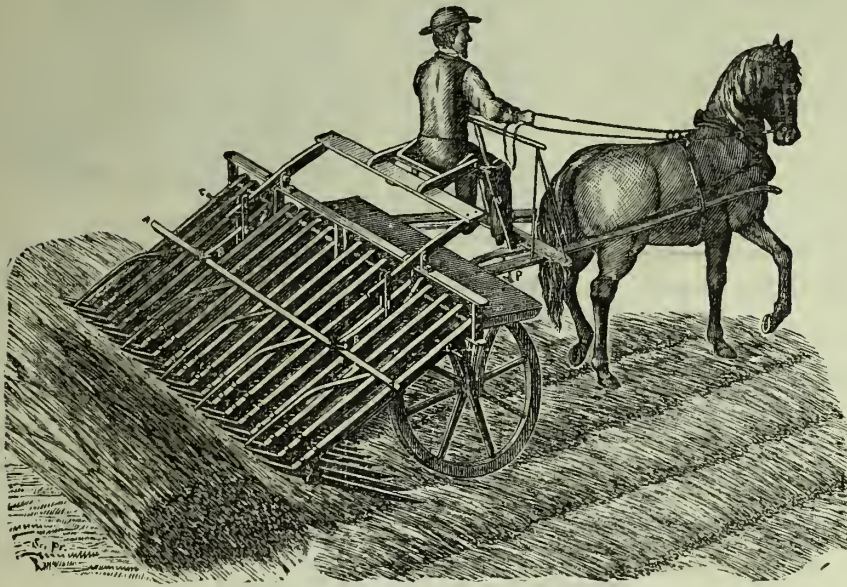
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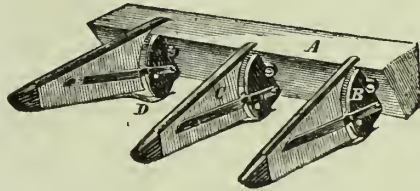
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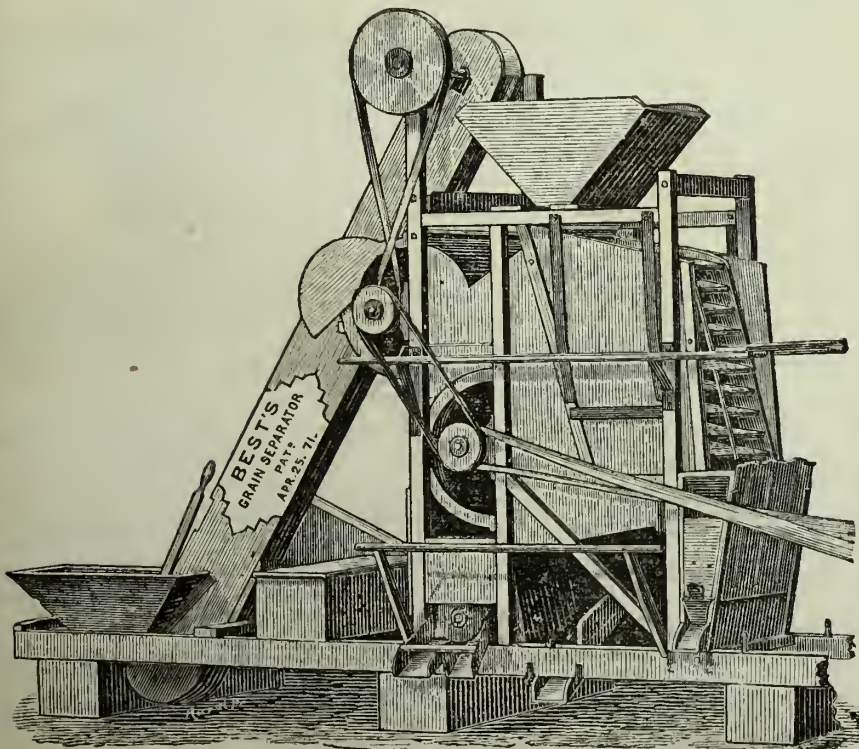
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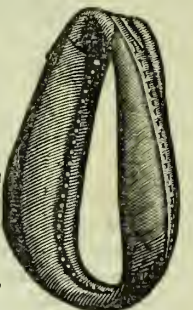
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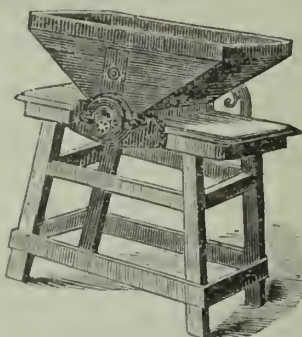
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Warner gives us another of the charming "Back-Log Studies;" Wilkinson writes trenchantly of Lowell's Prose; Holland discourses of "The Conservative Resources of American Life;" "Rum and Railroads;" and "Esthetics at a Premium."

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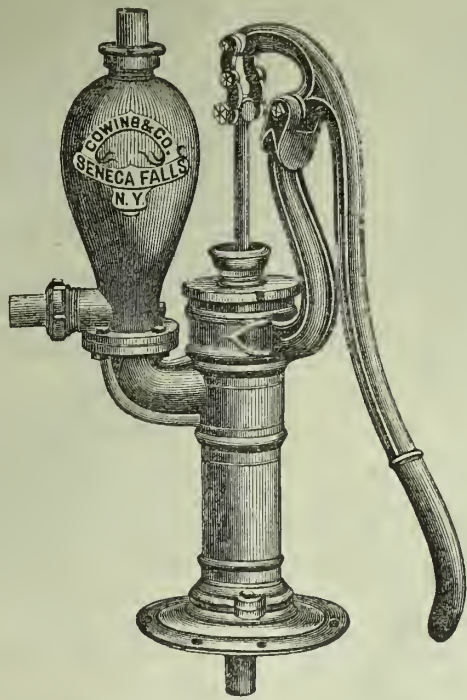
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STEEL AMALGAM FARM BELLS,

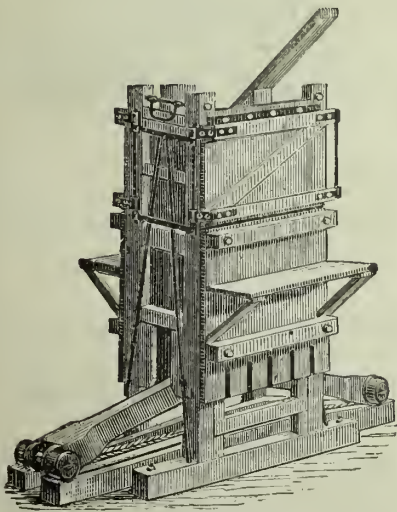
PIPE HOSE, HOSE PIPES,

COUPLINGS, ETC., ETC.

The above named goods are unequalled for finish by any others in the market, and the prices will compare favorably. For instance, the price of the Three-inch Force PUMP represented in the cut, with air chamber having two outlets, is FIFTEEN DOLLARS. Illustrated Catalogue sent upon application. Pipe cut to any required length, and estimates furnished.

13v3-lam-bp

THE EAGLE HAY PRESS.



The above is a correct representation of this remarkable

Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAI, OF ILLINOIS, TO WHOM LETTERS PATENT WERE ISSUED JANUARY 10TH, 1865, AND JULY 24TH, 1866.

Several years were devoted to the perfection of this powerful press, and its unprecedented sale in the East induces the proprietors to introduce it into California and the Pacific States.

All who have seen or used these Presses pronounce them superior to anything used heretofore. The power is applied by means of two levers, and it will be seen the power increases in ratio to the resistance; as the levers approach a horizontal position the power can scarcely be estimated. It is not only a powerful Press, but has the advantage of being Cheap, and also Simple, therefore not liable to get out of order.

Three men with one horse can bale from Ten to Fifteen Tons per Day, each bale weighing 250 to 300 lbs. It obviates all necessity by beating the hay before pressing. On account of its great power, it is well adapted for pressing Hydes, Rags, Wool or Cotton. When a bale is pressed and fastened, the follower runs down of its own weight, and the bales can be taken out on either side.

These Presses are now manufactured in San Francisco by the

Kimball Car and Carriage
MANUFACTURING COMPANY,

Who are the proprietors on the Pacific Coast, and will endeavor to have a supply constantly on hand.

Every Press made by them is WARRANTED to give satisfaction. Agents wanted.

PRICE, \$250.

18v3-3m

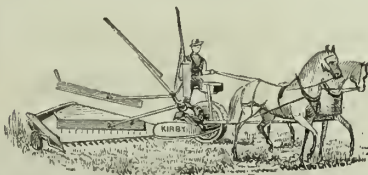


IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are,

1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on ANY ANGLE without EXTRA STRAIN OR FRICTION.

2d—It can be run with a STIFF OR LIMBER POLE, as desired.

3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machine before purchasing elsewhere.

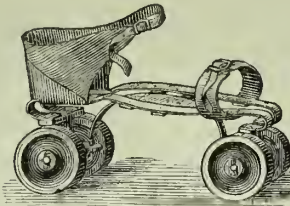
D. M. OSBORNE & CO.

By OMAR JEWELL, Manager.

18v3-3m

NEW INVENTIONS!

Boone's Patent C-Spring Skate—Rights and Skates for Sale.



This superior Skate is now beginning to attract the attention of Rink Owners, it being the only Cramping Skate now before the public (except the Plympton Skate) that can run without infringing a former patent.

THIS SKATE IS POSITIVELY NO INFRINGEMENT

Of anybody's patent. It is made in the most substantial and workman-like manner, and possesses the following points of merit: Beauty, Elasticity, Ease of Movement, Strength, Lightness, and does not injure the skating floor as much as the ordinary skate.

Every pair Warranted to be just what it is represented. Parties intending to

START A RINK,

Should examine and test this Skate. Sample pairs sent C. O. D. on application. Retail price, \$8.

In ordering samples, state the number of boot or shoe worn, and whether for lady or gentleman.

LONGSHORES COMBINATION TOOL.



This device is just what its name indicates. As a KITCHEN TOOL it is indispensable. It will fit and lift with perfect safety, any Stove Lid, Frying Pan, Pie Pan, Pot, Kettle, or any other vessel or dish used about a stove. It is a complete tool for stretching carpets, driving tacks, pulling tacks, &c., and is also a good Nut Cracker. It is made of the best malleable iron, and the Hammer, Pincers and tack puller, are all hardened so as to stand the roughest usage. An Agent is wanted in every town on the Pacific Coast to sell this valuable little implement. Retail price fifty cents. Special inducements to agents.

EUGENE F. DEWEY'S



The Most Complete Invention for Opening Cans ever Invented.

No family that uses canned Fruits, Vegetables, Sardines or Oysters, should be without one of these convenient household tools. No Restaurant, Hotel or Oyster Saloon can afford to do without one. It will cut any shaped hole, from a triangle to a perfect circle. One sample sent postage free for 75 cents.

GAS LIGHT FOR EVERYBODY!

Coil Oil Lamps Changed to Gas Lamps at a Trifling Cost, by merely Changing the Burner and Using Different Oil.

This valuable little invention can be attached to any coal oil lamp by any one in half a minute. It makes its own gas just as fast as it is required, and when the light is blown out, the gas ceases to be generated.

No Chimney is Required.

The flame is as white as city gas, and produces no smell or smoke.

One Burner is Equal to Six Candles, and Costs Only One Cent Per Hour.

This burner uses Petroleum Fluid, Danforth's Oil, Gasoline or Taylor's Safety Fluid. One burner sent to any address, postage free, on receipt of 50 cents currency or stamps.

GLASS



CUTTERS.

This novel invention coats but little and sells very readily. The Cutters are hardened by a new process making them very hard and durable. A sample will be sent to any address, postage free, on receipt of 75 cents, currency or stamps. It is just the thing for traveling agents.

WIESTER & CO.,

No. 17 New Montgomery street (Grand Hotel Building), SAN FRANCISCO.

Patronize Home Industry—Buy California—Made Fruit Jars.

THE "VICTORY" FRUIT JAR is now on its third year of trial, and is found to be the most popular Jar ever introduced here. They are packed six dozen in a box, each box containing openers to enable the tops to be easily removed when the fruit is used. See circulars packed in the boxes for directions for putting up fruit.



For sale by Crockery Dealers generally throughout the city and interior.

JOHN TAYLOR & Co.,

Agents Pacific Glass Works, 512 and 514 Washington St. 18v-1-3m SAN FRANCISCO.

CO-OPERATIVE MARBLE WORKS.

JOHN DANIEL & CO.,

Manufacturers of and Dealers in

Monuments, Headstones, Tombs,

MANTEL PIECES, ETC.,

421 Pine street, between Montgomery and

Kearny, SAN FRANCISCO.

21v2-1y

Pacific Oil and Lead Works,

SAN FRANCISCO.

Manufacturers of

Linsseed and Castor Oils,

OIL CAKES AND MEAL.

Highest price paid for Flax Seed and Castor Beans delivered at our works.

Office, 3 and 5 Front street.

3v3-cow-1y

Works, King street, bet. Second and Third.

FAIRBANK'S.

WEIGH

on

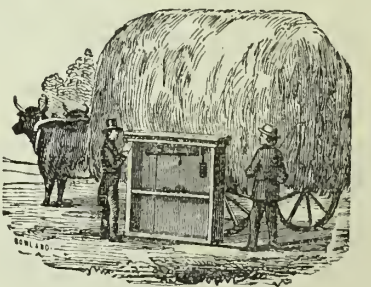
Wagons,

HAY,

ORE,

COAL,

Etc.



THE UNITED STATES
STANDARD.

6,000 to 40,000 Pounds Capacity.

THE SAME SCALE IS USED FOR WEIGHING
CATTLE, HOGS, ETC.

Scales of every kind. Address

FAIRBANKS & HUTCHINSON,

126 California street, San Francisco.

Agents for MILES' ALARM MONEY DRAWERS.

17v3-cowhpbm

THE CELEBRATED

"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins. Sweeny, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities.

COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors,
4v3-6m Stockton, Cal.

ACTIVE MEN!

WITH EXPERIENCE IN CANVASSING business, can now obtain lucrative and permanent employment by DEWEY & CO., Patent Agents and Publishers of the SCIENTIFIC PRESS and the PACIFIC RURAL PRESS, No. 338 Montgomery street, S. F.

KELSEY'S NURSERIES.



OAKLAND.

Established in 1852.

CITY DEPOT.

317 Washington Street.....SAN FRANCISCO.

The Proprietor having upwards of
100 ACRES OF NURSERY GROUNDS,
well stocked with all the leading and best varieties of
Fruit Trees and Fruit Buses; also Evergreen and De-
ciduous Trees and Shrubs, including the rarest of Coni-
fers, can fill all orders on the most reasonable terms
and with dispatch.

Choice Roses and Pot Plants
of every variety. Trees and Plants securely packed to
travel any distance.

FOREST TREES
of Australia, Europe, China and Japan; in fact, we aim
to have and to get all and everything desirable.

Parties planting can find in this establishment what-
ever may be wanted, for use and beauty, in furnishing a
place without being obliged to go from one Nursery to
another.

W. F. KELSEY, Proprietor.

12v3-3m

30,000

AUSTRALIAN GUM TREES,

(Eucalyptus.)

Of various varieties, including BLUE GUM, RED
GUM, IRON BARK, and STRINGY BARK, in boxes, in
excellent condition for transplanting, at \$10 per 100,

For Sale at the

GUM TREE FARM, HAYWARDS, ALAMEDA CO.,

- BY -

JAS. T. STRATTON, Proprietor.

FRUIT AND ORNAMENTAL TREES.

GLEN GARDENS,
ONE MILE EAST FROM SACRAMENTO.

My stock embraces all the celebrated varieties that
are favorably known, including the justly celebrated
"HALE'S EARLY PEACH," the Salway, Freemason and
other new varieties. Also, GRAPEVINE AND CUT-
TINGS of the leading sorts; 100,000 Blackberry and
Raspberry plants of the most popular kinds, warranted
true to name; Mulberry Trees, for feeding Silkworms,
in quantities to suit. All offered at low prices.
Orders sent by mail to the Proprietor will be promptly
filled.

2v3-3m

E. F. AIKEN, Proprietor.

THE OLD

Maple Leaf Nursery.

Has constant-
varieties of
ORNAMENT-
GREEN and
SHRUBS; also
ment of Choice
merous to
Green House
ers and Bulbs,
and Flower Seeds of all kinds, are for sale by

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

12v3-1f

Seeds, Fruits, Plants.

Our Descriptive Catalogues and Price-lists of GAR-
DEN, FIELD, and FLOWER SEEDS, SMALL FRUITS,
SEED POTATOES, etc., etc., ready in January, and
mailed Free to all on application. We know the value
of pure and true Seeds and Plants, as we grow Fruits
and Vegetables for market ourselves. D. H. BROWN
& SONS, Cherry Lawn Farm, New Brunswick, N. J.

H. K. CUMMINGS.

1858.

J. M. MAXWELL

1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission
House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco

Our business being exclusively Commission, we have
no interests that will conflict with those of the producer.
4v23-1y

Floral Guide for 1872.

Containing seventy-two pages and Two Beautiful
Colored Plates, fully illustrated, giving plain directions
for the cultivation of nearly a THOUSAND VARIETIES of
Flowers and Vegetables. Full bound with your name
in gilt, post paid, 50 cts. Paper cover and one colored
plate, 10 cts.

Address, **M. G. REYNOLDS,**
22v2-6m Rochester, N. Y.

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep,
selected from the best flocks in England.

Also ten Rams, and thirteen Ewes and Lambs, Silurian
Sheep.
Also five hundred Calves of the best milch stock in
the State, from 3 to 5 months old in June; from one-half
to full-blooded short-horn Durham. Calves to be taken
away in June or July. Also full blooded and graded
Angora Goats.

ROBT BECK, Secretary
State Agricultural Society, Sacramento.

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition
of the Mechanics' Institute, San Francisco :

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as
compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well
arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL,
JAS. SPIERS,
WM. H. BIRCH.
(Signed)]

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial
Exhibition of the Mechanics' Institute, San Francisco :

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We
recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGEL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST
Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump
was the only Pump, of any kind whatsoever, that received a MEDAL and FIRST PREMIUM
(highest award to pumps) at the last Exhibition, for which we are also selling agents.—See
official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most
thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent.
of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the
Mechanics' Institute ever held in San Francisco or California.

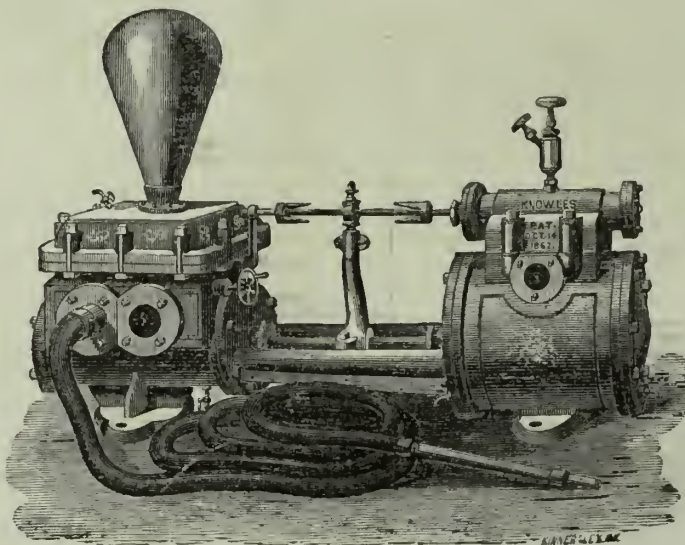
A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,
TREADWELL & CO.,
Market street, corner of Fremont, SAN FRANCISCO.

12v3-awbp

KNOWLES' PATENT STEAM PUMP.

Received the Highest Award---A Diploma---

Over all Steam Pump Competitors, at Mechanics' Institute Fair of San Francisco,
1871; also Special Medal and Diploma at State Fair.



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it
is always ready to start without using a starting-bar, and does not require hand-work to get it
past the center. Will always start when the steam cylinder is filled with cold water of con-
densation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee
of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump
to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in
economy.

CENTRAL PACIFIC R. R., OFFICE OF THE GEN'L MASTER MECHANIC,
SACRAMENTO, Cal., April 14, 1871.

A. L. FISH, Esq., Agent of the Knowles' Steam Pump, San Francisco—Dear Sir, In reply to your inquiry as
to the merits of the Knowles' Steam Pump, in use upon this road, I will say that we have nineteen of them in
use on this road as fire engines, and pumping water for shop and station use. I consider the Knowles Steam
Pump the best in use, and prefer it to any other. Yours truly, A. J. STEVENS, General Master Mechanic.

WE BUILD AND HAVE CONSTANTLY ON HAND
THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-eow-bp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics'
Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as
compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well
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The Blake Pump is the ONLY Steam Pump that EVER RECEIVED
A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held
in San Francisco or California.

A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,
TREADWELL & CO.,
Market Street, corner of Fremont, SAN FRANCISCO.

"Clear as Crystal."



PEBBLES ARE MADE from Rock Crystal cut
in slices and ground convex, concave or periscopic, for
Spectacles. In Europe and in the Eastern States they
are superceding glass.

Among the advantages they have over glass are, that
being susceptible of the HIGHEST POLISH, they trans-
mit more rays of light, nothing having more transpa-
rency.

They are COOLER to the Eyes—a very important gain.
They are much harder than glass, and DO NOT
SCRATCH.

The best quality of Crystal is found in Scotland and
the Brazils, and is manufactured into lenses by the best
workmen in England and France, for

Thomas Houseworth & Co.,
OPTICIANS,

No. 9 Montgomery street, Lick House,

Where they can be obtained, already fitted, in frames,
or may be fitted to order.

Persons sending their Spectacles can have Pebbles
inserted of the same grade as their glasses.

Illustrated Circular for style of frames sent to any ad-
dress free.

Pebsbles sold as such by us, are Warranted.
15v3awbp3m

WILLCOX & GIBBS

IMPROVED NOISELESS
Family Sewing Machine
IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out
of order, sews the heaviest or lightest goods, and
is remarkable for the great variety, perfec-
tion and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop
stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recom-
mendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.

Call on or address

WILLCOX & GIBBS S. M. CO.,

113 Post Street, S. F.

2v2-9m

HOME-MADE CHURNS!

H. G. PRATT,

113 Commercial street, between Davis and
Drumm streets,
SAN FRANCISCO,

Has been engaged for the last ten years in the
Manufacture of

BOX AND THERMOMETER CHURNS
in this city.

Also manufactures all kinds of Implements generally
used in Dairies. 6v3-3m

THE GREAT
RETAIL DRUG HOUSE

OF THE PACIFIC COAST!

JAMES G. STEELE & CO.,

Chemists and Apothecaries.

Import and sell directly from Eastern and Euro-
Markets.

NO. 521 MONTGOMERY STREET,

San Francisco.

Manufacturers and Sole Proprietors of

STEELE'S GLYCERINE LOTION

— AND —

GRINDELLA LOTION,

For the Cure of Itch Csk.

10v3-3m

Los Angeles County Lands.

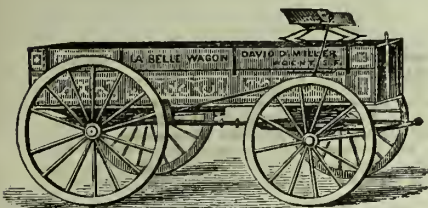
Farming Lands in Los Angeles County for sale, in
sections and quarter sections, at reasonable prices and
on accommodating terms—say, one-fourth cash and
balance in one, two and three years, with interest at 10
per cent., payable annually. Apply at the office of the
Company, No. 542, corner Market and Montgomery
streets, over the Hibernia Bank, San Francisco, or to
the agent, W. R. OLDEN, Anaheim. 12v3-3m

MATTESSON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.
This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to
MATTESSON & WILLIAMSON,
Stockton, Cal.
14v2-3m

FARM WAGONS.



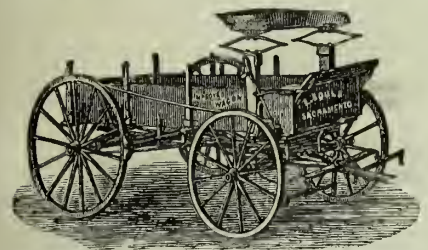
JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
Sheboygan Falls, Wis., established in 1850.

ALSO THE
CELEBRATED LA BELLE WAGON,
Manufactured by FARNSWORTH, WOODWARD & CO.,
At Fon du Lac, Wis.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate. Sold at from \$90 to \$125. Can be had only at

DAVID D. MILLER'S,
IMPORTER AND MANUFACTURER,
715 Market street, near Third,.....San Francisco.

Also on hand all kinds of Imported Wagons from the Eastern States, including Thorough-brace or Mountain Wagons, C Spring and Side Spring Buggies—in fact all kinds for the city and interior trade. Country orders promptly filled and warranted to give satisfaction, and at as low rates as though present in person. 7v3-tf



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,
Corner Tenth and I streets,
ap22-3m SAORAMENTO, CAL.

R. G. BRUSH. A. M. BURNS.
California Tattersalls.

A. M. BURNS & CO.,
AUCTION AND COMMISSION HOUSE.

Importers and Dealers in
every description of
HORSES, CARRIAGES, HARNESS, ROBES, WHIPS,
ETC.,
N. E. cor. Sansome and Halleck sts., San Francisco.
SALE DAY—Saturday, 11 A. M.
Farmers will find this institution invaluable for disposing of their fine stock.

REFERENCES—C. Adolphe Low & Co.; W. F. Babcock,
of Parrott & Co.; I. Friedlander; Main & Winchester.
Send for Circular. 14v3-3m

Every
Description of
Farming
Machinery

FOR THE HARVEST OF '72, INCLUDING HOADLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers Kirby's Mowers and Reapers, Header-Wagons, Studebaker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

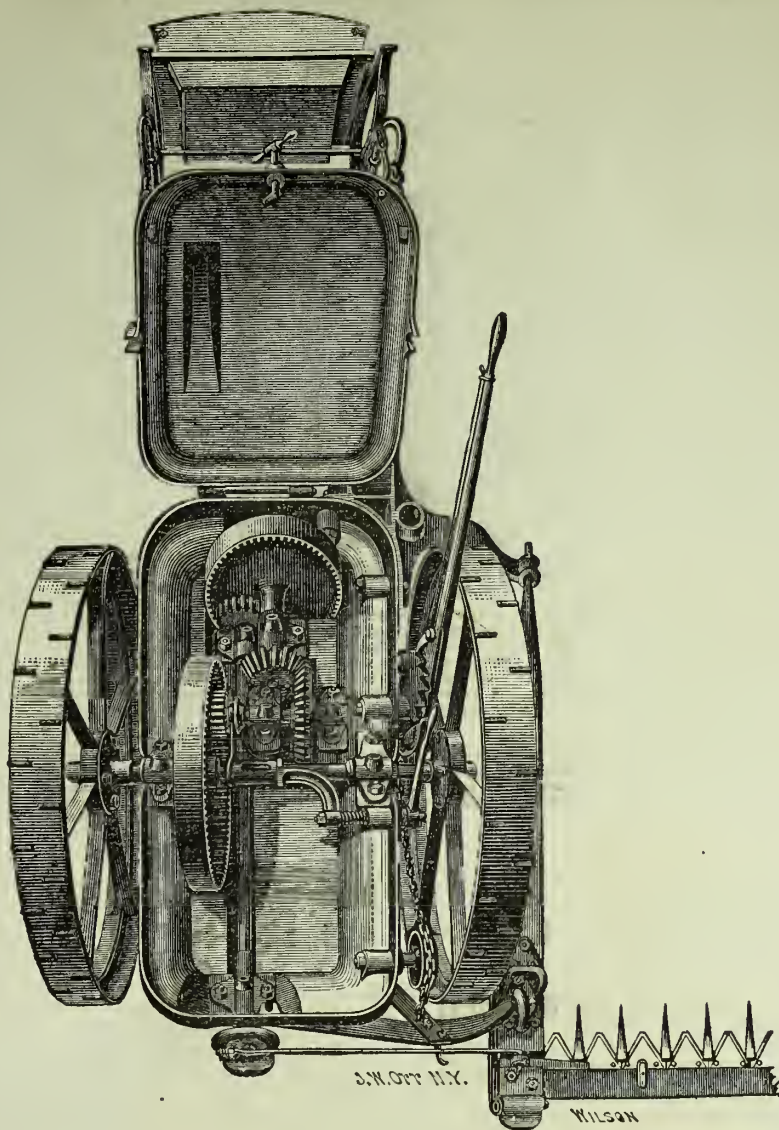
TREADWELL & CO.,
Market, cor. Fremont St., San Francisco.
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PAINTING.
HOUSE AND SIGN.

Walls Whitened or Tinted.

E. H. GADSBY,
7v3-cowbnp 585 Market street, San Francisco.

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains. ITS GEARING IS SHAPED TO STANDARD GAUGE, and EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAFT and the same DURABILITY which pertains to cut gear in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most Intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

“There is no other Harvester.”

For Prices and Complete Information address

LINFORTH, KELLOGG & CO.,

Nos. 3 and 5 Front street,.....San Francisco.

Importers and Jobbers of Foreign and Domestic Hardware.

SOLE AGENTS FOR THIS COAST FOR

The World Reaper and Mower,

Ball & Co.'s Ohio Reaper and Mower,

Ball & Co.'s Ohio Tornado Thresher,

Woolworth Handle Works—Ax, Pick and Sledge Handles,

Rumsey & Co.'s Lift & Force Pumps,

Enterprise Manufacturing Company—Self-Measuring Molasses Gates, Patent Tap Borers, Coffee

Mills, Etc., Etc.;

Leavy Railroad Lantern,

Electric Cross-cut Saws,

Proprietors and Manufacturers of the Gerrish Submerged Force Pump.

12v3-6m

MARCUS C. HAWLEY & CO.,

108 and 110 Front Street.....SAN FRANCISCO.

Importers and Dealers in

Hardware and Agricultural Implements

FOR THE HARVEST OF 1872.

Buckeye Mowers,

Buckeye Mowers and Reapers,

Buckeye Mowers—new model

Haines' Genuine Headers,

Sweepstakes Threshers,

Horse Powers.

Hollingsworth Sulky Rakes,

Hay Presses, Seed Drills,

Steam Engines, Etc., Etc.

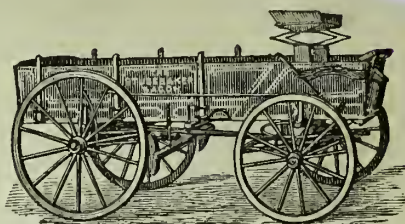
Also, a full stock of PLOWS, HARNESS, CULTIVATORS, and all kinds of HARVESTING IMPLEMENTS.
Send for Circular giving full description.

MARCUS C. HAWLEY & CO.,

10v3-3m

10 and 12 Pine Street and 108 and 110 Front Street, San Francisco.

STUDEBAKER WAGONS



Have become
The Standard Wagons of the Pacific Coast.

FOR QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.
IRON AXLE,
THIMBLE SKEIN,
HEADER AND

SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

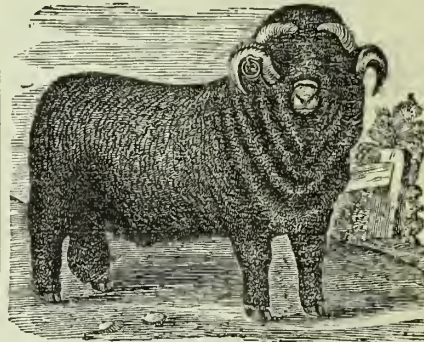
Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.

Important to Wool Growers.



PURE BLOODED
FRENCH MERINO RAMS
FOR SALE BY ROBERT BLACOW,
Of Centerville, Alameda County, Cal.

These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock. 16v3-6m

WATT & MCLENNAN,
WOOL COMMISSION MERCHANTS,

625 Sansome street, corner Jackson, SAN FRANCISCO.



Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

Stallions.

STATE PREMIUM STALLION—YOUNG RAWLEY. This fine young Norman Stallion will make the ensuing season as follows: At Pforr's Stable, Petaluma, every day from 8:30 A. M. to 4 P. M. At our ranch, near Liberty School House, daily, from 5 P. M. to 6:30 A. M. Single service, \$10, in advance; season, \$15, payable within the season, in U. S. gold coin. Season to commence April 1st, and closing July 1st. "Young Rawley" is a coal Black, 17 hands high, is nine years old, and weighs 1,650 pounds. He took the First Premium at the State Fair in 1868 and 1869, and in 1870, at Bay District Fair, San Francisco, for draft horses. Sired by "Rollins," he by "Robert Suscard," out of "Normandy." Imported from Normandy, France, by Erastus Martin and Benjamin Gorton, of Ohio Landing, in N. Y.; Feb., 1857. Dam—"Lady Jane Mas," by "Louis Napoleon," out of a Sherman Morgan mare. Good pasturage at \$2 per month, and due care taken to prevent accidents or escapes, but no liabilities assumed. A. & H. WILSEY, Prop'r's, Petaluma.

PREMIUM DRAFT STALLION—YOUNG RAWLEY JR. This fine young Norman and Eclipse Stallion will stand the ensuing season for a limited number of Mares, at Charles Hatsel's Ranch, Sunol Valley, Alameda county. Single service, \$10, in advance; season, \$15, within the season, U. S. coin. Season to commence April 1st and closing June 30th. "Young Rawley, Jr.," is a coal black, 17 hands high, is four years old next May, and weighs 1,500 pounds. He took the Premium for the best two-year old, at the Bay District Fair, San Francisco, for draft horses, in 1870; and at the Sonoma and Marin District Fair, Petaluma, in 1871, for the best three-year old draft. He was sired by the well known Norman horse, "Young Rawley." His dam, "Queen," was a thoroughbred Copper-Bottom and Eclipse. She took two successive sweepstake Premiums at the Sonoma County Fairs. A. WILSEY, Proprietor. JON PEASLAND, Agent. 13v3-1m

GEORGE HUGHES,
FRUIT, PRODUCE,
And General Commission Merchant,
313 and 315 Washington street,
Between Front and Battery.....SAN FRANCISCO.

HOUSE ESTABLISHED IN 1850.
14v3-6m

WOOL! WOOL! WOOL!

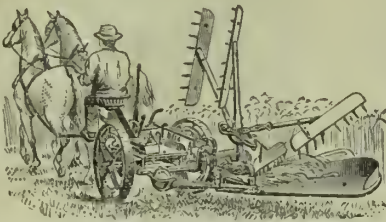
Highest prices paid for Wool.
Wool Graded, Packed and Shipped for Eastern buyers 12 reasonable terms.

ROBT. BECK,
Secretary State Agricultural Society,
Sacramento.
10v3-tf

SPANISH MERINOS.—We offer for sale low, about 100 of our fine Thoroughbreds. Send for Catalogue. Orders solicited. (24-v2) JOHN SHELTON & SON, Moscow, N. Y.

THE BEST IS THE CHEAPEST.

The SELF-movement on this can be desired, quickly attached, driven by a very chain, dispensation and cog is under perfect and large or raked at will, or to rake automatic bundle at every grain is delivered machine, out team. The rake to raking grain, and can be dropped down to pick up grain when lying close to the ground, while the machine is in motion. This Raking Attachment is very Light and very Strong.



Champion Self-Raking Reaper & Mower.

WE CLAIM FOR THE CHAMPION DURABILITY AND FREEDOM FROM BREAKAGES.

No farmer can afford to buy a machine that is poorly built, or in which inferior stock is used. Few accidents in the course of a year are so serious, as regards expense, and certainly none so trying on the patience as a "break-down" in harvest.

Our claims for the superiority of the Champion in this essential particular are founded, first, on the wrought-iron frame used on all of our Combined Machines. This frame is strongly riveted together and well braced, and upon it the shafting and boxing are firmly bolted. No wooden or cast-iron frame—the former liable to warp, twist and decay—the latter to constant and fatal breakages—can equal one of strong, wrought-iron bars.

Second, to the first-class material and workmanship throughout every part of these machines. No one now denies, either manufacturer or dealer, friend or rival, that the "Champion" is

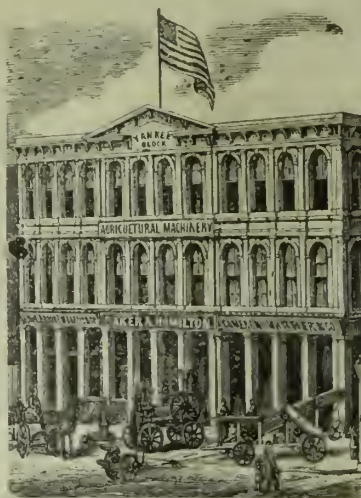
THE BEST MADE MACHINE IN THE MARKET.

This most enviable reputation has been obtained by the expenditure of a vast amount of money in the purchase of the best materials and the employment of the best mechanical skill. We do not claim that we offer these machines for the fewest dollars. In fact, it is difficult to determine just how low some machines can be bought from dealers determined to push their inferior and poorly made machines, of which they have an over supply, or from agents anxious to make their commission and work off "old stock." To all such we offer no rivalry. There may be farmers so involved in debt that they find it to their interest to buy these poor machines, but they are of the class who must stock their farms with second hand implements and broken down teams. To the well-to-do farmer, who is willing to pay a fair price on fair terms of credit for a first-class implement, we offer the

CHEAPEST MACHINE IN THE MARKET.

Regard being had to material and workmanship employed—durability, and amount and quality of service in grass and grain cutting. To this class of farmers we submit the "Champion" Machine for their careful inspection, even with a difference of ten to twenty dollars in the selling price over many of their competitors, and ask them to apply the same wise business principle which leads them to decide promptly a difference of fifty to one hundred dollars in the value of one horse over another.

RAKING ATTACH-machine is all that It is easily and ed by two bolts, is strong and powerful ing with all compli-gearing. The rake control of the driver small gavel can be the rake can be set ically, delivering a revolution. The eered at the side of of the way of the is particularly adap- lodged and tangled



Nos. 13 to 19, Front St., San Francisco.

THE CHAMPION with wrought-iron ary wrought-iron Drive-Wheels, and Cutter-Bar Conne-frame, secures the strength and dura-least weight. In points of the Guard-turned down to cut to the ground; or pass rough or stony the machine is work-ing apparatus may ed from the ground, structions while Cutter-Bar folds for transportation.



This cut represents the Improved "Champion" No. 4 Mower, (right-hand cut,) to which can be added a Self-Raking or Dropping Attachment.

Our new Tipping Arrangement for cutting lodged grain or grass is one of the most valuable recent improvements upon a Harvesting Machine. It enables the driver, by a lever conveniently arranged, instantly to control the points of the guard fingers up or down in grain or grass, and is equally valuable in Reaping or Mowing.

In reaping, grain can be cut clean by means of this device, that heretofore was run over and wasted, and at the same time when the lodged patches in a field have been passed the driver can INSTANTLY change the cut while in the standing grain, avoiding the heavy draft that would otherwise follow if cutting all the time low to the ground.

This arrangement is equally valuable in mowing grass, enabling the driver to dip the cutters down in badly lodged grass, instantly take it clean from the ground and then raise as the machine is moving, to cut higher in the standing grass.

The frame of this machine is made of four bars of wrought iron, double riveted at the corners. It is further strengthened by having the shaft for the main driving wheels firmly bolted across it. The power is communicated from both main wheels by means of internal gears meshing into pinions, which latter are upon a shaft, also lying across the main frame; on this pinion shaft is placed a bevel wheel, which in turn meshes into a bevel pinion upon a counter shaft, running at right angles to the above to the rear of the frame, and which counter-shaft has upon its further end the balance or crank-wheel, from which the power is communi-cated through the pitman to the knife.

The cutter or finger-bar is hinged to the rear side of the main frame. This hinged joint, indispensably necessary in a mowing machine, in order to allow the bar to lie close to the uneven and varying surface of the grass field, has caused much trouble to the inventor in order to give it the required flexibility with a strength sufficient to withstand the inevitable strain to which it is subjected when, as frequently happens, a spirited team is brought to a full stop by running it against an unseen stump or stone. The combination of flexibility and strength is obtained in the "Champion" by making the inner shoe of the cutter-bar quite long, and projecting the front and back ends of this shoe upward, so that through both may be passed a round rod of solid cold-rolled iron, which rod extends the full-length of the main frame, being fastened to the front and rear bars thereof; thus avoiding the difficulties incident to a joint no wider than the joint itself.

As a Mower, the "Champion" is as simple as could be made, were it not adapted for receiving the reaping attachments, and yet a Dropper, Self-Raker or Hand-Raker can at any time be added.

The Self-Rake is attached to the inside shoe at the cutter-bar, and rises and falls in unison with it.

Baker & Hamilton,

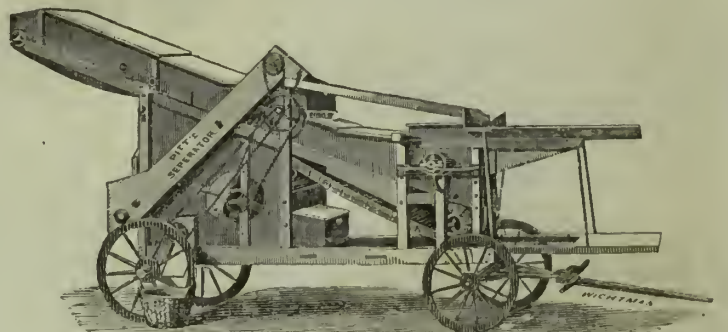
NOS. 13 TO 19 FRONT ST.,

SAN FRANCISCO,

—AND—

NOS. 9 TO 15 J ST.,

SACRAMENTO.



Pitt's Improved Separator—"THE CALIFORNIAN."

This is the acknowledged head of all SEPARATORS, and by continued improvements compels others to keep in the wake. Attempting to imitate and improve, without having a practical knowledge of what he desires to accomplish, an unskillful imitator brings forth a very poor representative of the original. The PITTS' THRESHER has stood at the head of Separators for a number of years, during which time innumerable aspirants for public favor have been introduced with great pretensions—have struggled and lingered through a few brief years, and then disappeared. The "CALIFORNIAN" has outlived all competition, and to-day stands higher than ever before. The Concave may be RAISED or LOWERED while the Machine is in motion. The Shoe is protected by guides, to which a Straw Stacker can be attached. No other machine has this. They are the only machines which required no altering last season. The TEETH are so arranged that it is impossible to crack the grain; yet it threshes clean, and NO GRAIN goes over in the chaff or straw. Mr. Bronson, a PRACTICAL THRESHER and MECHANIC, visited this coast from the factory, and adopted improvements suggested by the successful threshers here, and to them the machine is greatly indebted for its unparalleled success. Always buy the BEST. You will find it the cheapest in the end. The cost of repairs to the PITTS' is insignificant in comparison with other machines.

—30—

Baker & Hamilton,

SACRAMENTO,

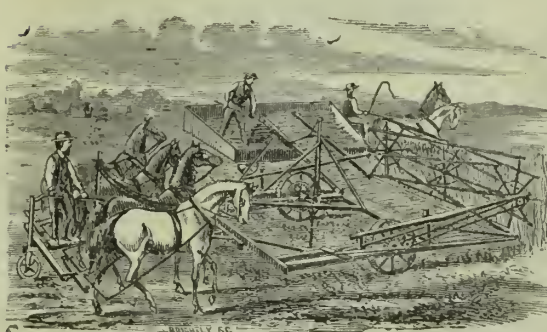
ARE SOLE AGENTS FOR THE

Buckeye

REAPER AND MOWER,

FOR THE NORTHERN PART OF

California, Nevada, Utah and the Line of the C. P. R.



The Haines' Genuine Header, Imported in 1872.

THE HAINES' IMPROVED HEADERS offered by us were imported this season, and consequently are greatly improved over everything on the coast. We have been agents for this reliable Header for a long time, and all sold by us have given entire satisfaction. It is impossible to enumerate the improvements put on our Machines this season. We believe we sell the CHEAPEST Headers in the market, if timber, cost of construction, and the valuable improvements which were made this year, are considered. The Header is nearly all Hard Wood. The drive wheel is eight inches wide, and has EIGHTEEN spokes, and the whole Header is made in the most thorough manner possible. Our supply of the Genuine Haines is limited, and we would suggest early orders.

—30—



Nellis' Original Harpoon Horse Hay Fork.

We accepted an invitation to witness the operation of the Nellis' Original Harpoon Horse Hay Fork. The trial took place a few miles from Detroit.

The fork itself is a beautiful and simple implement, not weighing over eight or ten pounds, easy to handle and operate, but it did not seem capable of lifting hay at all. The pulleys were soon adjusted, and the facility with which these pulleys were adjusted was a matter of special interest. They were suspended to the rafter by means of grapples and without the use of a ladder, and can be readily changed from one point to another, thus enabling the operator to carry his hay to any desired point in the barn. This saves a great amount of labor in "mowing away" (the most laborious part of haying). The same arrangement can be used in stacking. The hay had now arrived, the horses were attached, and the operation commenced, the load (about one ton) being removed and deposited in the farther corner of the barn in three forkfuls, and the wagon sent to the field for another load. The operator now, without the use of a ladder, changed the pulleys in about one minute's time, and again commenced operation, removing the load (about 2,500 pounds) CLEAN from the wagon at three forkfuls, in two minutes and twenty seconds; depositing it in the opposite corner of the bay, and in such a manner as to require scarcely any moving away. To the farmers we would say such practical demonstrations carry conviction with them, and we must confess ourselves convinced of the great merit of this implement, and think farmers would consult their interest by making similar investigation.—Western Rural, Aug. 5, 1869.

—30—



Nellis' Pulley.

The entire fixtures necessary for unloading hay under all circumstances, except the rope, is one Fork, \$15.00; one set Grapples, \$3.50; one set pulleys, 4 in number, \$2.60; Flour Hook, 25 cents; amounting in all to \$21.35.



Nellis' Grapple.



Whitcomb's Wheeled Wire Horse Rake, \$45.

THIS IS THE SIMPLEST, CHEAPEST AND BEST WHEELED HORSE RAKE EVER INVENTED.

The head is operated by means of treadles, gives the operator more complete control over it than any other method, and also avoids that continual jerking on the horse, which is so objectionable in every other Rake. The driver's hands are always free for the management of the horse. Nine-tenths of the Wheeled Rakes used on this coast are sold by us, and are always Whitcomb's.



Volume III.]

SAN FRANCISCO, SATURDAY, MAY 11, 1872.

[Number 19.]

Selection of Sheep.

Where access to large and good city markets is rapid and cheap, and especially on high-priced and high-titled farms, where sheep are kept in limited numbers as a part of a system of convertible husbandry, improved mutton sheep are the most profitable. In interior situations, remote from such markets, the Merino or fine-wooled sheep yield the best returns.

Mutton sheep, to develop their characteristic qualities successfully, require soils ranging from medium to first-class, and yielding regular and good feed. Some mutton breeds like the Southdowns thrive best on dry uplands, producing abundant and nutritious, but not rank vegetation. Others like the Leicesters, prefer moist, rich alluvial valleys, where the grasses are abundant rather than delicate.

With the Merino, dryness of soil is indispensable. There may be swamps or other wet lands on their range, to which they have free access, but they cannot be confined to them without injury to their health. The three mutton breeds of long woolled sheep, that have found most favor in the United States are the Leicesters, Cotswolds and New Oxfordshires.

The Leicesters, under the most favorable circumstances for their development, perhaps excel all others in earliness of maturity, and make better returns for the amount of food consumed by them; but they require better shelter, keeping and care than any other variety.

The Cotswolds are a larger, hardier and more prolific sheep than the Leicesters or New Oxfordshires, and the ewes are better mothers. The wool is very long, with bright lustre, and known as "combing wool," in our markets, being the most desirable and the highest priced of any. It averages twelve inches in length, and the fleeces weigh from ten to fifteen pounds each, some rams fleeces as high as sixteen to eighteen pounds each.

Messrs. H. Rankin & Co., wool dealers of Troy, N. Y., under date of Nov. 1870, say: "For the last five years we have handled, annually from three and a half to four million pounds of wool of all grades. 'Combing wools,' have been sold, for an average of, from ten to thirteen cents per pound over the best wools in market."

The mutton of Cotswolds is superior to that of the Leicesters, the fat being less abundant and better mixed with the lean meat. The hardiness of the Cotswolds is well illustrated by the fact, that they live and thrive as far north as the Ohio river without other food summer or winter, than the natural grasses of the meadows and forests.

They are much used in crossing with other breeds and varieties, giving size, longer wool and more wool to most of the short woolled families, and are decidedly a favorite sheep with the breeders of long wools in the United

States. They are exceedingly prolific; the English papers say that Mr. Richard Corydon of Staffordshire, has seven ewes, the whole of his flock, which have this year produced nineteen lambs, all alive and well. Two ewes brought four lambs each, one three, and the remaining four, two lambs each.

In California J. W. Johnson, Esq., of Stockton,—whose ranch is near Jenny Lind, Calaveras Co.—says: "Thirteen of my large Merino ewes—bred to a pure Cotswold buck—have forty lambs (dropped in Dec. last) which are now nearly as large as their dams; twelve of the ewes have three lambs each, and one has four lambs."

The fine illustration which we present herewith, is of an importation by the celebrated

Cattle on Tule Lands.

A person who has had large experience in the reclamation, culture and management of tule lands, having pursued the different methods adopted to bring the soil under subjection or fit state for the general culture of crops, by burning, and by direct breaking up of the tule sod, by powerful teams and heavy plows, gives it as his opinion, that where there is but a single owner, or where the land is fenced so that anyone can control his own with no infringement from his neighbor's stock, and the tract of land is large, the very best way, because attended with the least cost in proportion to the benefit received, is, after a substantial levee is completed, to turn upon it herds of cattle or milch

New Zealand Fair.

The Mechanics' Institute of Thames, New Zealand, is to hold an industrial exhibition in August next. It is proposed to make it more extended than that of last year by inviting the co-operation of the Australian colonies generally and California.

A leading purpose of the managers is to bring the young and rapidly rising district of the Thames, with its mineral and other resources, into closer acquaintance with its industrial neighbors, and profit by the intercourse.

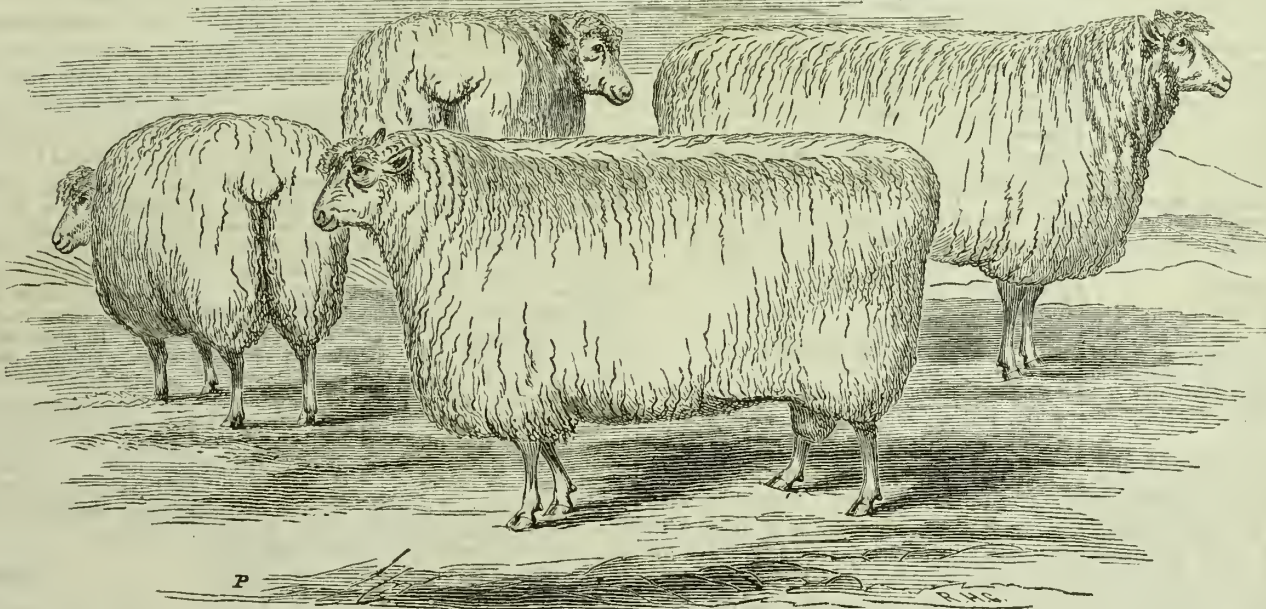
Though they are not prepared to receive very bulky or heavy goods on exhibition, they particularly invite an exhibit of models of appliances relating to mining; models and drawings for generating and transmitting power, and for labor saving; sewing machines; new inventions; flax—raw, dressed and manufactured; samples of silk production; wool, tobacco, cereals, malt, hops, leather, India rubber and gutta percha goods, woods and barks, art, pictures, statuary, photographs, inlaid and other works.

All goods for exhibition at said fair will be carried free of freight from San Francisco by the mail steamers to New Zealand, where they will be admitted duty free, with the understanding that if sold or not re-exported at the close of the fair the ordinary duty is to be paid. As the space on the steamers is limited,

persons desiring to send goods for exhibition should lose no time in communicating with our home Institute to secure the proper co-operation and endorsement. This is a favorable opportunity for all such as have articles of merit, likely to be of value to the people of New Zealand and the Australian world, to exhibit them, as representatives of all the nations, including China and Japan, will be present in force.

THE GRAPE CROP ABOUT SACRAMENTO.—While the grape crop in many parts of the State has been somewhat injured by the frosts of April, the vines in the vicinity of Sacramento have not been touched or injured in the least. There are thousands of acres on the plains east and south of Sacramento that present a better prospect for a good and very large crop of grapes this year than ever before. We have heretofore given it as our opinion that the general crop of the State, would not be found so badly injured as was generally feared immediately after the frost, and late observations confirm this opinion. We would again advise those whose vines were touched so much as to destroy the then growing shoots to go carefully through them, rubbing off the weakest shoots that have started out since, so as to prevent so great a number of fruit-bearing canes as to injure the size and quality of the berry.

STRING BEANS.—The first in the market for the season, were on sale at 25 cents per pound on Tuesday last.



IMPORTED COTSWOLDS.

breeders C. C. & R. H. Parks, of the Glen Flora Stock Breeding Association of Waukegan, Illinois.

Culture of Tobacco.

A correspondent of San José thinks it is strange that any one should recommend the sowing of a seed bed of tobacco in April, unless with abundant facilities for irrigation, and yet admits that he has this year succeeded in doing just what he seems to doubt can be done, viz: the successful growing of his tobacco seed sown in April.

He thinks, also, that we have a different climate and soil from that of the Eastern States, and that we must necessarily adopt different methods of cultivation, all of which we are quite willing to admit. Next, he suggests that we follow in "the footsteps of Mr. O. Judd, of the *Am. Agriculturist*."

We are not inclined to follow in the footsteps of any Eastern agriculturist, because our climate, soils and seasons differ so much from those of Eastern States.

If farmers are not willing to give the result of their experience for the benefit of their fellows who have had little or no experience, we know of no remedy. Certainly it is quite impossible for us to pay any farmer who may drop us a few lines occasionally, a money consideration for the same, particularly when the information conveyed is solely for the benefit of the patrons of the paper, and not to us as publishers.

cows, summer and winter, for at least four years.

During this time, at every returning winter and spring would sow large quantities of grass seeds of different varieties, harrowing or scratching it upon the surface without attempting to plow it. That every year will show an improvement in the quality of the grasses until finally the drying of the ground, and the cultivated grasses, will entirely overrun, or run out, any tule upon it. In the meantime, the treading of large numbers of cattle settles compactly the entire surface, whilst the mass of tule roots becomes completely decayed and much of it decomposed; rendering the plowing of the ground for a system of convertible husbandry, or grain-growing comparatively easy.

WOOD ASHES VS. BONE MEAL.—Dr. Piegel, according to the *B. Z. P. Lloyd*, manured a piece of grass land with wood ashes, and another piece of equal size with bone meal—the same value of both these materials being used. The results of the hay crop were as 23 to 17 in favor of the ashes, while the land treated with the ashes also gave a large yield of clover. A small portion of land was treated with a mixture of bone dust and ashes, and here the best hay crop of all was obtained.

The intelligent cultivator of the soil allows no motive to interfere in preventing his procuring, under any circumstances, the most perfect seed that can be obtained, regardless of trouble or cost.

CORRESPONDENCE.

Temperature, Rain and Crop Prospects in San Joaquin Valley.

EDITORS PRESS:—I send you the summary of observations for 1872, in this portion of San Joaquin Valley, completed for April:

1872.	AVERAGE TEMPERATURE,				h't Tm	l't Tm	Rain. In.
	7 A. M.	2 P. M.	9 P. M.	Mo. Mean.			
Jan'y.	40.20	52.30	46.15	46.21	61	27	2.38
Febr'y	44.68	59.11	49.69	51.16	67	34	2.42
March	46.16	63.60	50.40	63.38	70	36	1.45
April...	48.21	66.40	50.80	65.13	77	36	0.97

It may be well to observe that the average temperatures are given in degrees and hundredths, of Fahrenheit's thermometer; that is the one in common use in the United States. The averages are reduced to hundredths of a degree merely for the sake of accuracy in taking monthly and yearly averages. For practical purposes we can reject the figures after the decimal points, having regard to the following principle only: If this decimal is much more than 0.50, or one-half, call the number of degrees one greater. For example, the average temperature at 9 P. M. for April is 50.80 degrees; now if the decimal is rejected call the average 51 degrees, because it is nearer 51 than 50. The entire rainfall at this point for the season is now 15.74 inches. By reference to a report of the rainfall in this locality since the summer of 1868, which was published in the RURAL PRESS of October 28, 1871, on page 259, it will be seen that we have now had 0.63 of an inch more rain than fell altogether in 1868-69. But there is this

Marked Difference

Between these two seasons: In '68-9 the heaviest rains fell after, but this year before, the 1st of January.

	1868-9.	1871-2.
Before Jan. 1st	3.78 inches	8.52 inches
January	2.62	2.38
February	3.63	2.42
March	3.54	1.45
April	0.99	0.97
Totals	14.46	15.74

A glance at this comparison will show that our present spring rains have not been quite so abundant as in '69. Still they have been well distributed. There is this

Encouraging Feature

In regard to our April rains this season: The amount is almost exactly the same as for April '69; but, our last rain has been more favorably timed than in '69. For no rain fell here from April 16th to May 19th of that year, and our crops were very nearly ruined by a mouth of dry weather.

On the contrary, our last rain this April fell on the 27th to the amount of 0.65 of an inch, wetting the ground well more than six inches. This rain coming nine days later than the corresponding rain in '69, will naturally carry forward the crops with safety, that much longer through the hot spell usual with us in May, and insure them to some extent against the injurious effects of a drought. Judging from the past, we can hardly doubt, that we shall be favored with at least one more good shower this month. From May 19th to 22d, '69, we had rain to the amount of 0.65 of an inch, which may with truth be said to have made our crop that year.

It is the prevailing opinion that our last rain will fill and mature our early grain, while another good rain well-timed in May, will make our late sown wheat a paying crop.

Should that rain be as abundant and early as it was in May, '69, it is all we could ask. It is a very

Remarkable Fact

as regards the past wet season, that the heaviest rains for each month, except January, have fallen towards the end of the month.

FOR EXAMPLE, FROM

Nov. 25th to 29th	1.09 inches.
Dec. 17th to 31st	7.15 "
Feb. 24th to 27th	1.29 "
March 27th to 29th	1.05 "
April 27th "	0.65 "
Total	11.28

Although this cannot be said of January, as regards its heaviest rains; still, it is true, that the only rain in January which fell after the 9th, was on the 31st, though it amounted to but 0.07 of an inch.

This shows that the bulk of the rain this season has fallen towards the close of the month. Should this be any criterion to judge from, we may get no rain of any consequence till after the 25th, but it is to be hoped we will be favored with at least one refreshing shower in the first half of the month. In that case we may be confident that even our latest grain will come to full maturity on all our looser soils.

Necessarily the long dry spell in April must to some extent diminish the

Yield of Grain

throughout the greater portion of our State.

In no event, can we now reasonably expect the immense grain crop predicted by some of the most sanguine of our papers, who run their estimates to from 25,000,000 to 35,000,000 bushels for California.

Fortunate, indeed, shall we be, if our entire wheat and barley crop, with present prospects, amounts to 20,000,000 bushels for the harvest of '72.

J. W. A. W.

Turlock, May 2, 1872.

Cherry Currants.

EDITORS PRESS: When I located here some three years ago it was by way of experiment with most varieties of small fruits. My place is about three miles south from Alviso, at the head of the Bay, and it was predicted that cherry currants, especially, would fail, as they had been tested and proved a failure in this county. But I turned my back on these discouragements, and put in all the plants and cuttings I could command, knowing my stock to be genuine, and have continued to plant till I now have some 50,000 plants growing, the greater share of them bearing—the oldest plants now yielding full crops. Last year I sent to market 1,200 to 1,500 lbs. daily, and will double the yield perhaps this year.

Now to the sequel: My plants were put in close together in the rows, consequently the fruit was not sun-burnt last year, as in Alameda county; and while the PRESS reports heavy losses by frost in the currant crops this year in that glorious old county for fruit, my currants are comparatively uninjured. Indeed, the bushes are heavily laden, as usual.

My rule has been to plant all the small fruits of any promise, of the old as well as new varieties, for my individual satisfaction and benefit, which I have done entirely on ridges, so that by the aid of the artesian well I could produce a heavier crop than where this appliance is not at hand; and if we do not grow the very largest samples of fruit, it is because we grow so heavy crops. Could improve the size by closer pruning, which might not pay for the extra trouble. More of the results of my experiments at another time, if desired. Will add, however, that by applying water to my strawberries at the time of the late heavy frosts, they suffered but little therefrom.

L. A. WILCOX.

Experimental Gardens, Santa Clara, April 27.

Life in the Country.

EDITORS PRESS:—I wonder if the editor of the PRESS ever wished for a breath of the sweet spring air of the country. If he does, the fresh, blithesome air of this country is the place for him. Should he wish spring flowers, here he will meet with numberless varieties; should he listen for bird music, such a gush of melody would greet his ear as might gladden the heart of the sorrowing, and fill with pleasure the most indifferent.

Yet spring reminds me of the invalids who are going to try the medicinal springs the coming summer; some to Bartlett's, some to Dr. Witter's, (which is no doubt a fine one); some to one place and some another. The winter has been so bad here that all feel like flocking away for a little recreation before we are again beset with storms—so they say—but oh! they should remember that there are other storms, that the clouds do not bring. Animals are again beginning to look sleek, and the sheep that run over our hills are looking very much as though the shearer had robbed them of their wool.

A gentleman of our acquaintance has lately purchased a pair of Cashmere goats at the price of five hundred dollars, and intends breeding them with the common goat, of which he has quite a number. They have beautiful silken wool, about four or six inches long, and it has been sold for two dollars per pound. Wool buyers have scoured the country and bought every pound they could get, long weeks before the shearing season.

It seems, with the facilities the people of California have for sheep-raising, that they might be enabled to furnish our market with a vast deal more than they do. If one has land, let them plant alfalfa and insure plenty of feed for sheep during dry seasons. There is no more profitable employment for our farmers than putting themselves in possession of a flock of sheep.

There are but few of them that do not have more or less mountain range, and as timber is plenty, a very good fence can be constructed so that a person to care for them at all times is not necessary.

E. W.

Lake County, April 25.

Movement of Texas Cattle.

R. S. Elliott, Industrial agent of Kansas Pacific Railway, in the April 13 number of the *Railroad Gazette* gives an interesting account of the manner of disposing of the vast numbers of Texas cattle annually arriving at suitable age and size for the northern and eastern markets; he says:

A late number of the *Railroad Gazette*, in an article on the Texas cattle trade, states that "after the open lands on the great trail have become too limited for all the cattle," "it is probable the cattle will be shipped either as soon as they have crossed the Kansas border, or in Texas itself." I doubt the correctness of this view. The northward drive begins early in the season, in Texas, and as a general rule, the cattle are not in good shipping condition when they reach the Kansas line. Hence they must be herded in that region or be kept moving northward. In the northward progress they get fresher and better grasses, and in a great measure escape the torment of flies, which are much more numerous and vicious in Southern than in Central Kansas. This was illustrated in 1871, when it was found that the herds passed Newton, where shipping facilities were established, and kept on the Kansas Pacific, which handled some 160,000 head, against one-fifth that number shipped at Newton. Some herds even continued on northward to the Union Pacific. The season of 1872 will give us a similar experience. Owing to losses of cattle in Texas through lack of food, in consequence of protracted drought in 1871, the numbers driven in 1872 may possibly fall short of previous years, and they will not be in order when entering Kansas, coming, as they will, at an early day to meet an expected rising market. As they can be kept moving northward to fresher and better pastures as cheaply as they can be herded, and (at from six to ten miles a day) improve all the time, they will as a matter of course come on toward the line of this railway and most of them shipped on it. But they will not go to Abilene. By a map of the trail which I send herewith, you will see that its direct course strikes the railway at Ellsworth and west of that point. Ellsworth is 223 miles west of Kansas City, and the point where I write 16 miles west of Ellsworth. Between these is the station of "New Abilene," and at that place, as well as at Ellsworth and Bosland, many herds will be shipped.

The progress of settlements has driven the Texas cattle trade westward to these points, and in another year the shipments will probably be large as far west as Hays and Ellis, respectively 288 and 302 miles west of Kansas City. All this makes a longer haul for the railway, without a corresponding increase in rates of freight; but it grows out of circumstances which being a large increase of income in other ways, viz: the extension of farms and towns westward. In a few years the trade will probably be driven to stations beyond Ellis, in a part of the plains where the summer range is ample, and where the grasses are superior for winter pastures.

Home Discussion of Agriculture.

We have noticed more than once the fact that county Agricultural Societies as now managed, fail to meet the wants of farmers themselves. As rural holidays, these agricultural shows are tolerably successful, and for this, if for no other reason, they will probably be continued for years. The horse racing is the rallying point, and without this attraction the county fairs would be dull enough. When the question is asked: "Why don't your most intelligent agriculturist come out?" the answer usually is: Because there is little or nothing to interest such men. When the local fairs ceased to be an occasion for the interchange of practical information touching the whole range of farming interests, these men remained at home.

In order to supply just what is lacking at County Fairs, Farmer's Clubs have been organized in nearly all of the large towns of the State where agricultural interests are prominent. Intelligent and practical men meet together occasionally to talk over matters of general interest. There is very little of form. The simplest organi-

zation, with a Secretary and Chairman, is sufficient. In this half-informal way practical men, feeling at home, give their views without embarrassment; subjects of home interests are brought forward, discussions go to the very root of the matter, and often the best ideas on modern farming are evolved. Twenty or thirty of the most intelligent farmers, horticulturists and others coming together in this way, without making any special effort, always have something to say which is worth hearing and worth giving to the public. They manage to knock a great many humbugs on the head, and to elicit the very facts which are of most importance to agriculture in that particular neighborhood. The proceedings of some of these clubs are reported for the local papers, and attract deserved attention. The Farmer's Clubs are a most important supplement to the county agricultural societies.—*Bulletin*.

Sub-irrigation of Trees.

A correspondent suggests what he conceives to be a new way of irrigating the roots of newly-transplanted trees. It is as follows: When the tree or vine is ready to be placed in the pit which has been excavated for it, have ready at hand two or more buckets of coarse gravel, or enough so that when poured into the side of the pit the column of gravel will reach from the surface to the bottom of the roots; then fill the remaining space to within four inches of the top with the soil intended for the support of the plant; being careful in so doing not to disturb the gravel, but in such a way as to leave a trench around the outer-rim of the excavation, which will hold two buckets at least, of water. The water poured into the trench will find its way down the column of gravel, and the air be excluded; in fact, trial has proven it far better than a wooden spout, or an open hole of any kind for getting the water down and preventing evaporation.

The method seems to differ but very little from that well known one, almost as old as horticulture itself; which consists in putting a stratum of an inch of sand at the bottom; in this sand set a round smooth plug of wood two or three inches in diameter, and long enough to reach above the surface when the soil is filled in; over the sand spread another stratum of soil suitable to the growth of the tree. Upon this, set the tree and fill in, in the usual way; after which turn the stick round in the hole, draw it out, and fill the hole with sand. In place of a wooden plug some use a tin cylinder open at both ends; and empty until the soil is filled in, then fill the tube with gravel or coarse sand gently poured in, so then when the tube is withdrawn, the sand drops through it filling the hole as the tube is withdrawn. By this method less than half the sand or less than a single bucket full is needed for each tree.

Thinning Fruit.

Marshall P. Wilder in his address at the American Pomological Convention at Richmond, Virginia, said:

This is a lesson which we have learned, and the necessity of which we have often endeavored to impress upon cultivators, and which every successive season teaches with stronger emphasis. It is absolutely necessary for all who send fruit to market to send large fruit, and the markets are constantly and progressively requiring large and fine fruit. Even the Seckel pear, which once commanded in Boston market the highest price, will not now, unless of extra size, sell for any more than if as much as common varieties of larger size. A medium sized fruit, or even one of smaller size, may be more economical for use, but until some decided change in the preferences of the majority of purchasers shall take place, large fruit will sell better than small.

To produce this, fruit must not only have good cultivation but must be thinned, and we agree with Mr. Meehan that "one-half the trees which bear fruit every year would be benefitted by having one-half of the fruit taken off as soon as it is well set, and that the overbearing of a tree will in a few years destroy it." We may lay it down as a certain rule, that excessive production is always at the expense of both quantity and quality; if not in the same season then in succeeding ones, for when branch is contending with branch, leaf with leaf, and fruit with fruit, for its supply of light and food, it would be indeed an anomaly in nature if this should not result in permanent injury to the trees as well as the annual to crop.

MECHANICAL PROGRESS.

The Physical Properties of Steel.

In continuing our extracts from the recently published work of M. S. Graner, of the Paris School of Mines, it may be remarked that on the authority of Caron, that it has been successfully demonstrated that hammering steel *hot* produces the same effect as tempering—causing a combination of the carbon and iron. Graner, the author from which we are gleaming, thinks both hammering and tempering prevents the separation of the two substances already combined.

Peculiarities of Bessemer Steel.

It is a fact easy of demonstration that in the Bessemer steels, made in Sweden and Austria, hardness and the susceptibility of being tempered depend essentially upon the proportion of carbon held in solution.

In Sweden nine grades of Bessemer steel are distinguished according to their hardness, estimated by the tempering power. They are designated by the numbers 1, 1½, 2, 2½, etc., as high as 5, in passing from the hardest to the softest, and, at the works of Siljanfors, analysis has shown very near the following proportions of carbon:

No. 1.....	2.00 per cent. carbon.
" 1½.....	1.75 " "
" 2.....	1.50 " "
" 2½.....	1.25 " "
" 3.....	1.00 " "
" 3½.....	0.75 " "
" 4.....	0.50 " "
" 4½.....	0.25 " "
" 5.....	0.05 " "

No. 1. Links white pig metal with the hardest steel; it may, with difficulty, be forged, and does not weld.

No. 1½. Forges tolerably well, but does not weld.

No. 2. Forges well, but does not weld.

No. 2½. Forges well and commences to weld, although with difficulty.

No. 3. Forges very well, and may be welded in the hands of a skillful workman. It is hard steel.

No. 3½. Forges very well and welds readily. It is ordinary steel.

No. 4. Both forges and welds readily. It is soft steel.

No. 4½. Forges and welds perfectly, but has slight tempering power. It is hard or granular iron.

No. 5. Forges and welds perfectly, but has no tempering power. It is cast wrought iron, or homogeneous metal.

It will be observed that the proportions of carbon above quoted have no absolute power as regards the tempering power and the facility with which the irons may be welded or drawn out. The purer a steel is, the greater may be its proportion of carbon without destroying its welding and forging power. The greater part of foreign substances, excepting special metals, such as tungsten, titanium, nickel, etc., render steel short and destroys its welding power when the carbon exceeds a certain limit. All things being equal, the limit in question is lower according as the foreign substances are more abundant. This being the case, Bessemer steels made in France, and especially in England, must in general contain less carbon than Swedish steels. They are, in fact, made from pig iron of less purity; Bessemer steel, in England, rarely contains carbon enough to admit of being tempered, and can hardly be called steel.

When the proportion of carbon is increased the product becomes more or less short.

In Austria, as in Sweden, where very pure pig irons are treated in the Bessemer process, superior products are likewise obtained. Turner, the eminent metallurgist of Leoben, has adopted a system of classification slightly differing from the Swedish. He has, however, omitted the two first Swedish numbers, which belong rather to white pig iron, and has replaced the half numbers by entire numbers increasing from 1 to 7.

According to him the theoretical classification is as follows:

No. 1. Containing 1.5 per cent. of carbon, is malleable but yet not weldable steel. It corresponds to No. 2 of the Swedish scale.

No. 2. Containing 1.25 per cent. of carbon, is malleable steel, but difficult to weld.

No. 3. Containing 1.00 per cent. of carbon, is very malleable steel, which may be welded by a skillful workman. It is hard steel.

No. 4. Containing 0.75 per cent. of carbon, is very malleable steel, easily welded. It is ordinary steel.

No. 5. Containing 0.50 per cent. of carbon, is at the same time very malleable and very easily welded. It is mild steel.

No. 6. Containing 0.25 per cent. of carbon. It is granular iron, which is tempered with difficulty.

No. 7. Containing 0.05 per cent. of carbon, is homogeneous iron, which cannot be tempered.

When the fining is carried too far, a softer metal than No. 7 is obtained. It is short, without tenacity. It is the *burnt iron* of the blacksmiths; according to Frey, an oxidized and not a nitrogenized iron.

A NEW SOLDER WANTED.—The Prussian Society for the Promotion of Industrial Advancement at Berlin offer as a prize a silver medal, or its value, and the sum of 1875f. to the inventor of a yellow solder possessing the properties and quality of ordinary tin solder, and to be used for soldering brass or similar alloys so that the seams will not be visible.

Early Iron Making in England.

A discovery of unusual interest has just taken place at Merthyr, which throws a little light on the mode, or one of the earliest modes, of making iron. At the back of a row of houses, in Pontmorlais, built evidently within a few feet from a long bank of earth, sufficient soil from this bank had been sliced away to admit of drains, gardens, and other accommodations, leaving the rest intact, and that this remainder was of old deposit may be inferred from the fact that the earliest tramway, for which an Act of Parliament was obtained in 1804, and on which tramway Trevithick ran his first locomotive, passed over this bank.

In the rear of one of the houses occupied by Mr. John Emerys Jones, a sculptor, and a man of more than ordinary intelligence, a further portion of this slope was cut off lately by Mr. Jones, and in the progress of the labor he came upon several huge bones and a vessel of baked fire-clay, much in appearance like a crucible. Great care was at once taken in the exhumation, and the character of the discovery solved itself into the following:—In the centre of a circle of red ashes, placed on a pitched ground, was a circular vessel of baked fire-clay, 1 foot in diameter and ¼ of an inch wider at the bottom than at the top. This was evenly lined within, and at the bottom, which bore traces of great heat, were the remains of iron cluder, lime and partially fused bones. By the side of this were pieces of rusty iron and a larger collection of bones, evidently of animals.

The pieces of iron when fitted together appeared much like a "tuyere" for conveying blast, and near this was a wall built a little higher than the vessel, which, when examined by practical men, supplied the key to this interesting discovery. It would seem the contrivance was an early one for iron making or for making steel. The vessel would apparently be filled with iron ore, coal, bones supplying sulphate of lime; limestone for yielding carbonate of lime, and from the existence of mortared bricks in the vicinity, the vessel would next be bricked up, leaving an aperture for the blast. It is supposed that a circle of coal fire would then be brought to act on the vessel, and when a certain degree of heat had been attained a fire kindled within, and the blast brought to bear upon it through the tuyere from a bellows erected on the wall. The vessel would yield but about fifty pounds weight of iron, a fact which hints at very primitive times in iron making. If the contrivance—certainly long prior to the Bessemer era—were for blowing in the oxygen and making steel, the discovery is even of still greater interest.

UTILIZATION OF SLAGS.—We referred a few weeks ago to the so-called mineral wool, produced by throwing a steam blast upon the stream of molten slag as it issues from the furnace; other means of making use of this material are also adopted. In England the slag is generally broken up by stonebreakers, and used for metalling roads. The Bessemer slags from hematite furnaces, on account of the large quantity of lime which they contain, make excellent concrete. They are also peculiarly suitable for manuring potatoes and barley, as they fall to powder under the action of the atmosphere, yielding up their silica and lime in a very finely divided state. At the blast furnaces of Osnabruck, Hanover, the slag is broken up by a method which, under some circumstances, might advantageously be adopted elsewhere. The molten slag is allowed to fall from a height of about eight feet, into water, and is thus formed into a large bean-shaped gravel. From the water tank it is lifted by "Jacob's ladders," and is conveyed away as fast as it is produced, and largely used for ballasting railways, or for other road purposes.

PHOSPHORIZED BRONZE FOR GUNS.—The question of the use of phosphORIZED bronze as a material for guns is now engaging the attention of many of the European powers. For some time past important trials have been going on with guns of this material in Prussia, and, we understand, with the most satisfactory results. The Swiss Government have under trial a breech-loader of phosphORIZED bronze; the Dutch Government a muzzle-loader; the Italian Government, having repeated the static tests which were applied to this material by Montefiori-Levi and Kunzel of Liege, have resolved upon proceeding to the trial of guns of the material; and in Vienna some phosphORIZED bronze guns are about to be tested. Finally, the French Government are about to make some guns with this bronze, supplied from Liege.

BROWNING GUN BARRELS.—Have your barrel bright and free from grease; you can get a pretty glossy appearance by the following mode: Apply the fluid with a sponge, being particular not to touch it with your hands. Let it remain from six to ten hours, or until it gets a brown coat of rust. Then scrape it off with a steel brush, give it another coat and scratch as before until the desired color is obtained, which you will readily see when you wet it with the fluid. Now take half a pound of carbonate of soda to one gallon of water and boil; scald the barrel with it after it is scratched off the last time, and, while it is warm, apply grease and it is finished with a beautiful glossy appearance. Five or six coats are enough to bring the desired color.—*Scientific American*.

A MAN in Illinois has patented an iron shingle roof. The shingles are about six by thirteen inches, lap each other so as to insure a waterproof, and are fastened by headless nails. The patent is said to be less expensive than slate.

SCIENTIFIC PROGRESS.

The Relation of Science to Religion.

The *Scientific American*, in making editorial allusion to the development theory of the Darwin school, remarks as follows upon the relation which science bears to religion:—All scientists have agreed that what can neither be demonstrated as a fact, nor logically inferred from facts, has no place in science. Reasoning by analogy can therefore have a comparatively limited sphere in science. For although well determined analogies are facts, the chances are ten to one that a supposed analogy will, when critically examined, turn out to be only a pseudo resemblance.

What we charge against the teachers of this school is that, while their development theory is purely a system of analogical reasoning, they do not declare that this or that conclusion is *probably* correct, but assert it as a fact, and as dogmatically as the most ultra and fanatical religionists, whose bigotry they denounce. Thus Huxley, in his address on protoplasm, asserts as positively that in this substance we have the ultimate physical basis of life, and that protoplasm has its origin in the chemical combination of carbon, hydrogen, oxygen, and nitrogen in the presence of living protoplasm. The whole tone of his address, though he did not say as much in words, was a sort of triumphant self congratulation that there was no need of supposing a special creator, since chemical affinity was the general cause of animal existence.

Is then chemical affinity the cause uncaused? Have we yet, or shall we ever arrive at the cause uncaused? Does the development theory, the knowledge of protoplasm, help us in recognizing the first of all causes? Would even spontaneous generation, if proved to take place, as many have sought to prove, reveal a cause behind which we can affirm no other cause can stand? From the very nature of the case, we can answer these questions in the negative.

So long, then, as mysteries exist, and this will always be the case, man will by faith stretch out his hands toward the hidden realm, and hope that in that realm there may be something, to satisfy the aspirations of his soul, brighter and better than what he has found through all his gropings. And this faith will form the basis of some kind of religion. The majority of men may perhaps be taught to believe that the human race sprang from apes, but so believing, and seeing the enormous distance they have progressed from the condition of those animals, they will hardly set limits to progress, and will be little convinced that all opportunity for individual advance is limited to the few toilsome years which form the average term of human life.

The skepticism of the present day is based upon as blind a faith as the belief of the orthodox. But we do not care to quarrel with this faith, or with conclusions derived from pure speculation, any more than we would quarrel with faith in revealed religion. The question of religious belief is one which has no place in scientific discussion. All scientists admit this, yet there are many who omit no opportunity to give sly and sarcastic thrusts at the belief held by many wise and good men, which, forming the very character of the men who entertain it, is deserving of respect rather than ridicule, not to speak of its intrinsic claims to the acceptance of intelligent minds. Professor Huxley has been particularly obnoxious in this way, and has thereby greatly limited his influence as a public teacher.

It may be replied that as the religionists attack the scientists, the latter must make some reply in self defence. We do not see the necessity. It is the business of science to discover, record, and classify facts. Whether these facts conflict with or confirm the religious faith of any, does not concern in the least the scientific investigator. If he discovers that the ancestors of mankind were apes, it is his duty to announce his real or supposed discovery; it is not his province to turn upon those who have held a different view and hold them up to scorn or ridicule because they believe they sprang from a higher source, and repudiate their anthropoid ape ancestors. If religion be false, it needs no direct attacks to kill it. If the discoveries of science be facts, they will outlive all false notions and superstitions. Science and religion should not be directly antagonized, for, besides that this is needless, neither one nor the other is benefited by such controversies.

All this we can say, while we own to a decided leaning toward the evolution theory. It seems more consistent with the way in which an All-wise Being would work, that through eternal and immutable laws He should evolve the varied complex structures which people the universe, than that each should be the result of a special act of creation. In this we see nothing that conflicts with such an interpretation of the Mosaic accounts as would harmonize with the now very generally conceded allegorical and poetical character of that portion of the Bible.

PROF. OWEN, in a recent article, says: "Physiology can affirm no other than that bipeds enjoying (?) 800 years of life could not belong to our species."

TYPHOONS move in a parabolic rather than a circular course is the result arrived at by a careful investigation of the phenomena connected with the fearful storm of September last.—*Mr. Frank Armstrong*.

BRANDY FROM WOOD SHAVINGS.—C. G. Zetterluno has been making some experiments in the distillery at Hulta to make brandy out of shavings. For this purpose they were boiled in an ordinary kettle under a pressure of 2lbs to the inch. There was then put into the kettle: Shavings, (pine and fir, very wet)..... 9.0 cwt. Sulphuric acid, 1.18 sp. gr..... 0.7 cwt. Water..... 30.7 cwt.

Total..... 40.4 cwt. After boiling 8½ hours the mass of shavings contained 3.33 per cent. grape sugar, and after 11 hours cooking 4.38 per cent. A further increase in the quantity of sugar could not be obtained. There was obtained in all, from the 40.4 cwt., about 1.77 cwt of grape sugar, or 19.67 per cent. of the weight of the shavings. The acid was neutralized by lime. The mash had a temperature of 30° C. when the yeast prepared from only 20 pounds of malt was added. At the end of 96 hours the mash was done fermenting, was then distilled and yielded 61 quarts of 50 per cent. brandy at 15° C., perfectly free from all flavor or smell of turpentine, and of a very pure taste.

It is more than probable that the manufacture of brandy from shavings on a large scale would succeed if it were ascertained by experiment with how much water the acid must be diluted and how long it must be boiled, for both of these circumstances exert a great influence over the production of sugar.

If it were possible to convert the whole of the cellulose in the shavings into sugar, each hundred weight of air-dried shavings would yield about seven gallons of brandy of 50 per cent. The shavings of the leaf-bearing trees would probably give the best results.

SURFACE ELECTRICITY.—M. Terquem has recently made some experiments for further elucidating the fact that the exterior surface of a hollow body is alone affected by electricity. Faraday showed that a small animal, placed inside a cylinder of wire gauze, was not incommoded when the cylinder was so highly electrified that sparks were freely given off by it. He also constructed a room, 12 feet in each dimension, of metallic wire, and suspended it by ropes of silk; and he found that, occupying this room, with electroscopes and electrometers at hand, there was not the slightest indication of electrical action inside the chamber, even when sparks of considerable length were given off by the metal of which it was made. M. Terquem verifies these results by taking a metal bird-cage and suspending it to an insulated conductor of an electrical machine. While sparks sufficient to indicate a highly charged electrical condition were obtained from the exterior, pitch balls, feathers, and even a gold leaf electroscope remained unmoved inside. Two bundles of linen yarn were hung, one outside and one in; the inside one was unaffected, while the outside was excited, the threads diverging from each other and giving out sparks.

ELEVATION OF POLAR LANDS.—Regarding this change of level, Mr. Howarth remarks: "Not only is the land around the Pole rising, but there is evidence to show that the nearer we get to the Pole the more rapid the rise is. This has been demonstrated most clearly in the case of Scandinavia by Sir Charles Lyell, who carefully gauged the rise at different latitudes from Scania, where the land is almost stationary, to the northern part of Norway, where the rise is four feet in a century. While in Spitzbergen and the Polar Sea of Siberia, if in the memory of seal-fishers and others the water has shallowed so fast as to have excluded the right whale, we may presume that the rate of emergence continues to increase until it reaches its focus at the Pole, as it certainly diminishes until it disappears toward the south, between the 56th and 58th parallels of latitude."

A NEW HYGROMETER.—Those who have attended chemical lectures will remember that marks made on paper with chloride of cobalt are almost invisible, but that on exposing the paper to warmth—as, for instance, holding it in front of a fire—the marks at once become visible. This change is owing to the varying color of this salt under variations of moisture and temperature. This property of the chloride of cobalt to change its color has also been applied to the preparation of such chemical toys as fire-screens, in which portions of the views by which they are illustrated appear or disappear according as they are warmed or cooled. It is now proposed to employ it in the construction of an hygrometer which shall, by its changes in color, indicate changes in the quantity of moisture in the air.

SULPHIDE OF ZODIUM.—This salt has lately been used in blowpipe analysis as a re-agent, in the following manner: The mineral under examination is fused with borax under the reduction flame. A small quantity of sulphide of sodium is then added, and the substance again submitted to the flame. Iron, silver, copper, lead, nickel, cobalt, bismuth, palladium, thallium, and uranium give opaque masses of a brown or black color. Zinc gives a white mass; the product with cadmium varies from red to yellow as it cools; that of gold and platinum give a bright light brown, and that of tin a translucent yellow brown.

In aerating distilled water for the purposes of the table on ships, the nearer the temperature of the air and liquid approach each other, the more readily do they combine.—*G. W. Baird, U. S. N.*

FARMERS IN COUNCIL.

Oakland Farming, H. & I. Club.

[Reported for the Press.]

The meeting of this Club on Friday evening, May 3d, was fairly attended, quite a number of ladies being present. By unanimous vote the resolution adopting the Constitution at the previous meeting was reconsidered, and the Constitution amended so as to require three Vice Presidents instead of one, and then again adopted. J. V. Webster, of Fruit Vale, Brooklyn, and Dr. W. P. Gibbons, of Alameda, were elected Vice Presidents. The election of committees was postponed till the next meeting. The President, Prof. E. S. Carr, delivered a most interesting lecture on

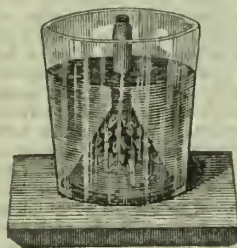
The Organic Constituents of Plants,

Which was heartily received. He showed how by perfectly understanding the organism of plants, and their requirements in propagation and development, the wise farmer is enabled to increase his crops without impoverishing his soil. The large proportion of the elements of growth and sustenance of the vegetable kingdom, are derived from the atmosphere and water, as may be judged from the following table:

	Grain of Wheat.	Straw of Wheat.	Tubers of Potato.	Hay of Clover.
Carbon.....	46.1	49.4	44.0	47.4
Hydrogen.....	5.8	5.3	5.8	5.0
Oxygen.....	43.4	38.9	41.7	37.8
Nitrogen.....	2.3	0.4	1.5	2.1
*Ash.....	2.4	7.9	4.0	7.7
	100.0	100.0	100.0	100.0
Sulphur.....	0.12	0.14	0.08	0.18
Phosphorus ..	0.30	0.80	0.34	0.20

*Including sulphur and phosphorus.

By this statement it is seen how little of the plant is left to replenish the soil when the vegetable matter is consumed by fire or rotted above ground furnishing only the ash, (2 to 7 per cent.) for replenishment. This is argument enough against the burning of straw in our grain fields. To supply the materials entering into the growth of plants in favorable proportion and in



the best time and manner for them to be taken up and consumed as food is the office of scientific knowledge when combined with practical observations of soils, climates and culture.

The absolute necessity of free oxygen for the germination, budding, flowering, fruiting of plant was shown. If we observe plants growing under water, we find fine silvery bubbles of air attached to their leaves. No stem, until it has reached the surface, has yet put forth its blossom. Seeds packed in hard earth excluding all air will not commence their errand of life while thus deprived of oxygen. So too when denied the same element by too much moisture, they will rot, but not grow. A few brilliant, but simple

Experiments

Were given by the Professor, showing the use of oxygen in combustion, and in the respiration of animals. And the same as relatively required in the growth of vegetation.

He showed how oxygen was concerned in the decay of plants and animals—how fruits, meats, etc., are preserved by the air or oxygen being excluded. One of the principal products of this action of oxygen in effecting the decay of plants or animals, and in combustion, is carbonic acid gas. This in turn serves as food for plants; furnishing carbon for the vegetable tissues, starch, sugar, etc. He showed how the oxygen consumed by the above mentioned processes was again restored to the atmosphere by the leaves of the plants through the instrumentality of the sun light, thus purifying the air and rendering it fit for animal life, by a very simple experiment.

That any reader of the Press may enjoy repeating one of the experiments most easily performed, we give herewith an illustration which shows that plants absorb carbonic acid (by breathing) and discharge oxygen. A glass funnel corked tight at the small end is loaded with leaves of plants or flowers, and then filled with water. A flat dish is held over the funnel while it is being inverted and set into a larger vessel of water. The plate is then withdrawn. The surface of the water surrounding the funnel should be lower than the upper line of the water in the funnel. The whole is then set so that the rays of light can penetrate to the plants. A little warmth from the sun will accelerate the action of the leaves and in a few hours a sufficient quantity of oxygen will be generated to make a brilliant experiment in the evening. As the oxygen gas forms in the small end of the funnel the water recedes, giving evidence of the amount generated. By removing the cork and quickly applying a live spark upon the end of a splinter the flame is re-kindled and burns in the presence of the oxygen with exceeding brilliancy.

A vote of thanks was passed to the lecturer,

with an invitation for the delivery of similar lectures from time to time hereafter.

The subject of irrigation was selected for discussion at the next meeting, it being considered a timely one. The Executive Committee were requested to name a series of leading points upon which information is desired, and correspondents from all sections were invited by resolution, to write and send in suggestions to the Club on the subject.

A resolution was passed to allow inventors, by consent of the President and one or more of the other members of the Executive Committee, to present their inventions and models for the inspection of the Club at its meetings, to be discussed, (if the owners so desire) on their merits, by individual members, but not, under this resolution, to be endorsed or rejected officially by the Club. Patentees and introducers of useful novelties, and discoverers or owners of interesting curiosities worthy of notice, to be allowed the same privileges of exhibition that are extended to inventors.

Mrs. J. E. Benton presented a specimen of a native material recently discovered on this coast, said to be an exceedingly fine article for polishing silver and like articles. An examination of it will be made by the President and reported to the Club.

Five names were added to the Club, viz.: Dr. W. P. Gibbons, T. Hart Hyatt, T. Corly, E. M. Peterson, Wm. A. Watts.

The next meeting, by adjournment, occurs Friday Eve., May 17th.

Sacramento Farmers' Club.

The club met at 1 o'clock P. M., on Saturday, Vice President Baker in the chair.

The minutes of the last meeting having been read and approved, C. H. Cummings presented to the club four specimens of a single variety of a pear, grown by J. H. Young of Fiddletown, Amador county. The letter of Young, accompanying the fruit, stated that there was nothing remarkable about the fruit except that it was so well preserved at this season of the year; that they had been placed in a basket when gathered and had stood under the tree since that time fully exposed to the weather, and not knowing their true name desired the club to classify and name them.

The members of the club, after examining and tasting them, came to the conclusion that they were poorly grown specimens of the *Glout Morceau*, having the appearance and texture of pears whose growth and quality had been affected by the drought, being hard and woody.

The Strawberry Festival.

On motion a committee, consisting of Greenlaw, Rutter, Wolf and Johnston, was appointed to make all necessary arrangements for this occasion to come off at 2 o'clock P. M. next Saturday, on which occasion the club proposes to practically discuss small fruits, and especially strawberries. Messrs. Rutter, Miller, Murphy and others propose to supply the berries, while Manlove, Aiken, Wolf and others will contribute the cream, and the sugar will come from the Sacramento Beet Sugar Factory, and the farmers' wives will bring in the cake. The place at which the festival will be held will be announced through the press.

The Subsoil Plow Trial

Being the next subject in order, the club adjourned to East Park. Arriving there by the street railway cars, they found the plow already at work in a field adjoining the park, and a large number of farmers and others apparently highly interested in its operations. The Farmers' Club committee, consisting of Greenlaw, Aiken and Johnston, assumed the direction of the trial, a full account of which will be found in the following report made to the club:

To the President and members of the Farmers' Club of Sacramento—Gentlemen: Your committee appointed to conduct the trial of the two-gang subsoil plow invented by C. Myers, of Marysville, beg leave to report, that in order to form a correct conclusion of the merits of such plow they first asked of the inventor and manufacturers a statement of their claims, and received the following:

1. That the plows can be used as an ordinary gang, or as one plow and a subsoiler.
2. If used in the latter manner the subsoiler follows in the previous furrow—not behind the ordinary plow; and they claim a decided improvement in this, inasmuch as the off animal always walks in a hard furrow.
3. They claim a decided improvement over any axletree now in use, in strength, and ease of raising or lowering the plows.
4. The gangs are all made of wrought iron, except the fall, and are made stronger than any now in use.

The plow was not tried as an ordinary gang except with the subsoiling plow attached, but raised to the position of an ordinary plow. In this condition it was put to work on a piece of land covered from a foot to eighteen inches with weeds and salt or joint grass. It performed its work on this land admirably, and to the entire satisfaction of all present, turning the furrow well and covering the weeds and grass completely beneath the soil.

The subsoil plow was then dropped five inches below the other, and the machine set to work in this condition. The subsoiler being at the right and ahead of the other, it follows the off horse and cuts a furrow directly in the bottom of the furrow made by the other plow at the previous bout, throwing the subsoil entirely out of its way and laying it up on the top of the soil thrown out by the other plow at the previous round. The left and ordinary plow following,

cuts a furrow and lays it over in the deep trench thus made by the subsoiler, and thus at each round the operation is repeated, and the surface soil and the subsoil have pretty effectually changed places. The mould-board of the subsoiler can be changed so as to throw the subsoil entirely out on the surface, or to so drop it as to mix it with the surface soil at will.

In fact your committee do not hesitate to pronounce the plow a complete triumph, giving the farmer an implement with which he can work his soil to any required depth, and mixing the surface and subsoil to suit any condition of his land. On this trial the ordinary plow was put down eleven inches and the subsoil five inches deeper, thus trenching the land sixteen inches in depth.

The subsoil plow with mould board was then removed, and subsoiler without the mould-board was substituted. By the change the subsoil was only loosened up and left in its original position, as in the ordinary system of subsoiling. But the great advantage of the Myers plow for ordinary subsoiling consists in the fact that the soil, after being stirred once, is not packed down again by a man and horse walking over it, and the horse, by this plow, always has a hard surface to walk on. Again, the labor and time of one man is dispensed with and the work better and more cheaply done.

Your committee feel that they are but expressing the opinion of every farmer present when they pronounce the improvement of Mr. Myers on the plow one of the most important that has been made to that instrument for the last quarter of a century. The whole gearing of the gang is very strong and simple, and can be easily worked by a lever so as to put the plows in deep or shallow, at the will of the operator, while in motion, and a plow and subsoiler of any shape or pattern can be attached, so as to adapt it to any kind of soil. On the whole, we would recommend the plow to the farmers of the State, both as an ordinary two-gang plow and subsoiler.

A. S. GREENLAW,
E. F. AIKEN,
J. R. JOHNSTON,
Committee.

After the trial the members of the club and others present met in the hall of the East Park House when a general expression in reference to the plow and its performance was had and universally commending the same. The proprietor of the house brought in wine, crackers and cheese, all of which seemed to be relished by those present. President Baker, gave as a sentiment the success of the Myers' plow and the identity of the interest of the mechanic and the farmer.

The following named gentlemen joined the club: John H. Wolf, William M. Baker, G. Soche, E. P. Figg, J. H. McKune and H. P. Osburn.

The thanks of the club were voted to Myers for his invention and to the proprietors of the East Park House for the courtesies and hospitalities extended the club and its members.

San Jose Farmers' Club and Protective Association.

[The following report is furnished us by the Secretary, S. H. Herring, of the California Agriculturalist.]

The meeting of last Saturday was of much interest. The Committee appointed to arrange for the trial of mowing machines reported the several agents willing to test their machines. The time and place for the trial is not yet decided upon.

J. F. Holloway called attention to a revolving milk-rack which he had lately given a trial, and he recommended it as much neater and more convenient and economical of space than the old style stationary milk shelves. An upright post is pivoted into a block so as to turn, and the rack is so constructed that the pans are arranged in tiers around the post. It is simple and easily made, and the person handling the milk can stand by a table and reach every pan.

The Secretary read the Constitution and By-Laws of The Oakland Farming Horticultural and Industrial Club. Words of approval and wishes for its success in good works were unanimous. The instrument was commended for its brevity and completeness. The Standing Committees were considered to be an excellent feature. As to the Order of Business, it was suggested that it would be better to choose the "subject for the next discussion" immediately after "new business" as there are then likely to be more members interested than if delayed until the discussion is closed.

Selling the R. R. Bonds and the Tax Payers.

The following Resolution was introduced by Benj. Casey:

Whereas there is much dissatisfaction among the people about the fee paid Lovell & Spencer by the board of Supervisors for selling the County Railroad bonds; and Whereas in consequence of the very great change in the manner of assessing the property of the State there are many enquiries and some fears that much injury may be done the producing classes of the County: Therefore be it RESOLVED, that a committee of five be appointed to investigate these subjects and report to the Club at an early day.

Benj. Casey said that there appears to be evidence that an outrage has been committed against the people by the selling of our County Railroad bonds, and that the allowing of 10 per cent. to Messrs. Lovell & Spencer for "negotiating the sale," by our Supervisors, smelt very strongly like a "Tammany ring"! The matter deserves investigation. Investigation is the life of truth and the death of error. The law has plainly made it the duty of these

officers, or servants, to protect the property and interests of the people. Should we be so fortunate as to vindicate their honesty, no harm could come from an investigation, while if there is trickery we want to know it. As to the taxes we could not see how the burden would be made lighter by taxing every improvement at its highest value, unless it made taxes lighter on *unimproved property*, and on the *large* landed estates, and this is just what we don't want.

L. F. Chipman regarded the whole transaction and sale of our County R. R. Bonds as a corrupt and designing swindle. The voters were first called upon to subscribe \$150,000 to the bonds, and did so. Next we were called upon to say whether we would sell them, and we voted no. Why did not our votes decide it? It look to me like we were ridden over rough shod and swamped in a bed of corruption that needs stirring up, and if it stinks, let us all take a smell at it! He had understood that the County Supervisors had agreed to pay Lovell & Spencer 10 per cent. to collect the dividends due the County from the railroad, and that they then sold the bonds and exacted 10 per cent. on the whole amount. Then to top off the whole thing the sale was taken before the Legislature and confirmed. Frank E. Spencer, of Lovell & Spencer, being one of the Assemblymen from Santa Clara County, engineered the thing through to his own notion.

J. W. Haskell would like to know whether the confirmation of the Legislature gave validity to the transaction? He was willing to take his part of "the smell," and wanted the thing "stirred up."

Mr. Caldwell had been surprised to see the bonds sold in the face of the people who voted "no!" and was slow to believe it had been done. He thought that it throwed contempt upon the voice of the people of this county.

W. H. Ware had understood that the proposition to the people was whether they would sell the bonds for \$100,000. When we voted "no" the Supervisors then sold for \$120,000.

J. F. Holloway regarded this question of vital importance to the county and Farmers' Club and Protective Association. It seems to become our duty to strike at this thing and to prosecute the investigation. It is a well known fact that the railroad agents with corruption funds were sent all over this county to work in behalf of the railroad. In spite of all strategy the people voted no. To say nothing of our decision being thus disregarded, look at the demoralizing influence before the youth of our land. Look at the thousands these lawyers pocketed with ease—the people's money, while the honest and industrious man with slow and patient steps laborously works his way! What business individual property holder would have thought of giving such a sum for a similar transaction. Whether it was ignorance, imbecility or maliciousness on the part of our public guardians, we want this thing probed to the very center.

This taxation business needs looking into also, to see that we are not paying a larger per cent. than we ought to pay. A few thousand dollars in the treasury for "appropriations," etc., may be all very fine, but the small tax-payers are the ones to stand the butt in peace and in war also; and it is we who pay the small amounts and who are treated with contempt, who now propose to investigate and understand such matters.

The Sack Question

Was then in order, and was severally discussed by the members. The monopoly to control the market and make the farmers pay high prices was condemned and it was determined not to patronize any such ring if it could be avoided. A committee of two was appointed to telegraph to manufacturers in Europe and to correspond with dealers in the Atlantic States with a view of getting a supply from abroad. The subject for next Saturday, May 11th, is: "The conveyance route from San José to San Francisco via Alviso."

WILL LARKSPUR KILL GRASS HOPPERS?—We find the following in a letter of a correspondent of a late number of the *Australasian*: "A few weeks ago Adelaide was invaded by grasshoppers, and I found them lying dead in hundreds round the roots of every larkspur in my garden. The sorts were trifolium and dwarf rocket. The leaves of the castor oil tree answer the same purpose, but where larkspurs are growing the grasshoppers will eat them in preference."

VERY intellectual women are seldom beautiful. The formation of their features, and particularly the forehead, is more or less masculine. Miss Landon was rather pretty and feminine in the face, but Miss Leslie and the celebrated Anna Maria and Jane Porter, the contrary. One of the Misses Porter had a forehead as high as that of an intellectual man.

POCKET-MONEY.—If you want to ruin an impulsive boy, give him plenty of pocket-money. The recipe is infallible. We have often seen it tried, and always with same unhappy result.

ONE REASON for the popularity of the *RURAL PRESS* is the fact that it possesses in its columns some attraction for each member of every intelligent family—old and young.

AGRICULTURAL NOTES.

CALIFORNIA.

AMADOR.

Ledger, May 4: AMADOR RAISINS.—We were presented by Mr. J. S. Campbell with a lot of fine fresh raisins, produced from his vineyard near Butte Mountain. The lot presented to us are equal to the average of commerce, and shows that raisins can be produced in Amador county, that would find equal favor in the markets with those of the most favored localities. Mr. Campbell has a large number of the raisin grape vines in his vineyard and will in the future give particular attention to the production of raisins for home market. Since testing the quality of those presented to us, we are surprised that our grape growers have not given more attention to this branch of production connected with their vineyards.

BUTTE.

Appeal, May 3: GRAIN ON THE RED LAND.—Yesterday, M. C. Thurston, who resides on the Honcut adjoining the Sewell ranch, left in our office some fine samples of grain—wheat and barley, grown on a high red land ridge. The wheat is of the Sonora variety, which rarely exceeds four feet and a half in height. The sample shown us is five feet and an inch in height, heavily headed. One of the stools contains thirteen stalks, all from one kernel. The barley is very heavily headed, four feet eight inches high, thirteen stalks in one stool. The grain was sown on the 20th of November, on ground freshly plowed. One stalk grew one inch and a half by actual measurement during the 24 hours previous to its being cut. This is sufficient evidence that the red land will produce good crops in a favorable season.

LIVELY.—The hardware and agricultural implement depots are doing a good business now. Farmers are securing mowers, reapers, headers and threshers, and preparing for the coming harvest, and scarcely a day passes but what more or less of these implements are being taken to the country.

GRAIN ON THE HONCUT.—In conversation with a gentleman from the Honcut yesterday, we learn that the late-sown grain on the bottom lands is looking finely, and bids fair to yield an abundant harvest—the spring being favorable. It is now of good growth and excellent color, and should it receive a few showers, will doubtless produce abundantly. It is not yet safe from the effects of a long spell of north wind, unless the top soil should be again moistened. There is moisture enough in the subsoil for all purposes, if the north wind does not dry the upper soil to a hard crust. The grain on the bottom lands along the Honcut is about a month behind that on the uplands, owing to the soil being so full of water, and its consequent coldness.

COLUSA.

Appeal, May 3: PROSPECTS OF COLUSA. In conversation with a gentleman from Colusa, we learned that the indications are very favorable for a prosperous season in Colusa county. He thinks the season will be the best known for several years. The wool clip has been generally contracted for at high prices, and its sale will bring a large amount of money into circulation. The prospects of the grain harvest are most flattering, and the farmers will probably do better this season than ever before. The range or pasturage is excellent and stock is in fine condition. All things considered, he thinks that the present season will be the most prosperous one Colusa has ever known. We are glad to learn of the prosperity of our Colusa friends, and hope it may continue for several years, as they are, generally speaking, a Christian people, and deserve success.

CONTRA COSTA.

Gazette May 4: THE CROPS.—Although the crops have been assured since the first rains, and after every sprinkle we have had during the season, according to the dictum and faith of most of the newspapers, it must be the weather from this date on, until the last of June, that will determine the question for us as to the yield of the grain crops. If we have a few more showers, with cool weather, and dewy or foggy nights, the late sown grain will have a tolerable show, and the early sown will be all the better, though that does not absolutely require more than an ordinary chance now to turn out a fair yield. But with the occurrence of frequent northers and hot weather the late sown grain will hardly be worth harvesting. It is very certain that the extravagant anticipations of an immense crop in the State will not be realized, though there will probably be as much as can be profitably disposed of.

EL DORADO.

Republican, May 2: FINE GRAPES IN MAY.—We are under obligations to Mr. John Jamison, of this city, for a fine lot of grapes sent us the other day. They were as plump and juicy as when taken from the vine. Though, of course, the flavor is not so fine as that of a fresh grape, taken at this season of the year, we appreciated them much more than during the grape season.

FRESNO.

Expositor, May 1: THE haying season has commenced in earnest in this county. A large number of our farmers who have heretofore contented themselves with using scythes, have this year purchased mowers and are making hay in the most approved method. We should judge that fully three times as much hay will be cut in this county as there was last, or any previous season.

THE rage on the part of new settlers for the location of homestead and pre-emption claims in this county, we are glad to say, still continues. The day is not far distant when every available foot of agricultural land in the county will be occupied and cultivated by industrious and thrifty farmers. This prosperous season has sealed this county's fate in this particular.

HUMBOLDT.

Times, April 27: BUSY.—We learn that the farmers all over the county are as busy as bees preparing their fields and planting the seeds for the season's crops. Many and perhaps most of them are putting in a varied crop, which would seem to be the safest course to pursue every year. By adopting a rule of this kind they will likely hit the market in something, and thus be in some measure remunerated for the labor and expense incurred in planting. If the attention is employed in raising one article only, and that should prove to be worthless on account of over supply and low market, the season's labor is lost. But if a variety is produced it would be otherwise; then, if one article fails, another makes up the loss. From the best information we can obtain the latter course is being now being pursued, and further, that the quantity planted in acres will greatly exceed any former year. We hope a favorable season and bountiful returns may be realized.

LOOKING FOR LOCATIONS.—We learn from parties in our stock-raising localities that numbers of persons from the interior and lower portions of the State are coming into this county, looking for localities and ranges for stock. Most of these, we understand, are in the sheep-raising business, and they are anxious to find new and better ranges for their herds than where they now are. There are, no doubt, large tracts of land in Humboldt county suitable for such purposes, that are unoccupied, or if occupied, are held by virtue of no other right or title than simple possession, the land being, or the greater part of it, unsurveyed public land, and which will have to be relinquished as soon as the United States Surveyor comes along.

MERCED.

People, May 4: The prospects of the country surrounding this town are more flattering than at any period since this section was opened to settlement by farmers. Farming operations are generally upon a grand scale, and the soil being rich and fresh, an extraordinary yield will be garnered the present season. The late rains have been sufficient to insure the maturity of full crops of all the various kinds of cereals in cultivation, and an unusually large amount of harvesting machinery will be required to gather the crops. The haying season has already commenced, and numberless mowing machines may be seen in operation in every direction. A large amount of wild grass is being cut and cured for hay, and in addition, many farmers are cutting a liberal proportion of their early grain for hay for home market. Merced being the place of supply for a large extent of country surrounding it, immense numbers of headers, threshers, mowers, wagons, derricks and derrick forks are being received and forwarded to farmers daily.

Tribune, May 4: Thirty cars of stock and 750 bales of wool from the front passed through Merced the present week en route to San Francisco. For the past two weeks an average of forty cars of freight each day have arrived at this point.

Building still continues with unabated vigor at this point, and many structures are receiving the finishing touches.

On Tuesday last a party of tourists from the East, five in number, passed through Merced, en route to the Mariposa Big Trees and Yo Semite. On Wednesday, a party of three followed suit.

NEVADA.

Truckee Republican, May 2: FISH CULTURE: Messrs. Stewart & Kelly made a beginning last August in trout raising near Donner Lake. They have two ponds one-fourth of a mile from the lake. They have in their two ponds 22,000 trout. Of these 12,000 average two years old, and 10,000 are minnows caught last September. These minnows average four inches in length. Their largest pond is 600 feet long by 40 feet wide. The other is 200 feet long and 100 feet wide. The average depth of these ponds is about ten feet. Messrs. Stewart & Kelly intend to procure spawn for 100,000 more trout from Lake Tahoe this spring. Thus far they have met with most encouraging success in their enterprise. All that is needed in the business of raising trout for market by artificial means is a little care, patience and experience, and success is sure to follow.

ILLEGAL DESTRUCTION OF FISH.—We learn that for several days past a large number of fish have been taken illegally from the Truckee river at Boca. Large net baskets are used which extend nearly across the stream and prevent the fish from coming up to spawn. Tons of them are taken by means of these baskets. The attention of the fish Commissioners is called to such illegal acts. Preserving fish from wanton destruction in the Truckee river and its tributaries is a matter of importance not only to the people of this region, but also to the State.

SANTA CRUZ.

Sentinel, May 4: COLD WEATHER.—The early part of the present week was very cold and wintry. The consequence is, that crops are not as promising as might be expected, and the ground, for corn and beans, in a wet, cold condition.

COONS.—Trappers and hunters are catching a large number of coons, coyotes, squirrels and other varmints for their hides and scalps.

LARGE TROUT.—The Marin papers are crowing over their large trout, and the abundance of fish in all the streams. Let the lovers of trout fishing come to Santa Cruz, and they will find innumerable streams, with every hole full of genuine speckled trout—not the large salmon and silver trout, but the real brook trout, black and yellow speckled, from twelve to sixteen inches long, with flesh as fine and solid as an epicure could desire. We have never known trout fishing to be better than this year, and the heavy floods of last year washed out the streams so that there is but little underbrush along the banks to interfere with the anglers.

SANTA CLARA.

Advocate, May 4: ANGORA GOATS.—Ab. Warthen & Co., of the Central Market, in this city, shorn a two year old Angora wether, last Wednesday. Its fleece weighed eleven pounds. The goat is a $\frac{3}{4}$, and was raised by Hon. James P. Sargent. The flesh of the Angora goat is pronounced by experts to be superior in sweetness, tenderness and nutriment to that of the sheep. This being true with the much higher price its wool brings, renders it far more profitable than sheep raising, and will at no distant day take, to a large extent, the place of sheep in California.

THE WEATHER.—The weather since Tuesday of this week has been the warmest of the season. On Wednesday the mercury stood in the shade at the brick store of Wangenheim, Loewi & Co., 96; on Thursday, 86; and on Friday, 82.

STANISLAUS.

News, May 3: ITS EFFECT.—From reliable farmers, who are well posted, we are assured that the rain of last week was worth, in amount, a million bushels of grain to Stanislaus county alone.

GOOD WHEAT.—We have in our office a sample of wheat, grown on Hughes & Key's ranch, west of the San Joaquin river, in this county, that is nearly five feet in height. We are assured that it is but a fair sample of a four hundred acre field belonging to the same parties. The crop in that whole section is reported as looking remarkably thrifty.

THE RAIN.—The rain at this place last Friday night was indeed most opportune. In many localities the late sown grain was suffering severely for the want of it. The amount of rain that fell, together with the cool weather that followed, has, however, had a most happy effect. From different localities the same good, cheering news reach us "that our crops are now assured."

OUR POTATOES.—On last Saturday we partook of a dish of fresh potatoes, planted and raised by our own hands. The seed was of the "Early Rose" variety, and consequently were in the ground but seven weeks until they were raised to the kitchen table of our editorial residence.

We doubt if Horace Greely can beat us on potatoes, yet we have no desire to write a book about what we don't know of farming, notwithstanding it took us but ten minutes to harvest our crop.

RAIN FALL.—We learn from Capt. Wright, a gentleman who always takes great interest in such matters, that the late rain of the 27th ult., measured at Turlock 64-100 of an inch; and that the entire rainfall for the season, at that point up to date, is 15 $\frac{1}{4}$ of an inch, which is something near two-thirds of an inch in excess of what fell at that place during the very successful crop year of 1869. The news from that locality, as well as from all other parts of the county, as to crop prospects, is very flattering.

SACRAMENTO.

Record, 29: ALDERNEYS.—A freight car at the foot of J street, yesterday, attracted a continuous crowd. It had come by the passenger train of the day before, which ran off the track. Its freight was eleven Alderney cows, valued at \$7,000, just imported from their native island to Boston, and from thence direct here. They went by last night's freight to San Francisco, to D. O. Mills, W. H. Ralston, T. H. Selby, Derby & Flint and P. L. Weaver, who were the owners, and will soon be in possession of them. For cows averaging \$636 each they are absurdly small, with two little horns that a moderate goat would be ashamed of. They are very pretty, though, with heads as delicate and intelligent as those of deers. Their value becomes more apparent when one learns that the smallest one of the lot gives twenty-seven quarts of milk, almost as rich as genuine ranch cream, daily. The heifer, like the little pig that could eat a pail of slop and then be put in the pail, could herself be put in a twenty-seven gallon measure. They were under the care of Wm. M. Cate, of Boston, an expert with imported stock, who brought them through the long trip in the best of health and fine condition. There was some surprising Oriental chickens on the same car, going to Weaver.

TUOLUMNE.

Independent, May 4: FINE RANCHES AND CROPS.—From all sections, we are in receipt of information in relation to the state of ranches and the forwardness of crops. Altogether, the crops of old Tuolumne bid fair to give an extra large yield.

HOT WEATHER.—At noon, for several days this week, the thermometer has marked 87°. This observation was had at Zelko Jalumstein's window, which is on the shady side of washing street, Sonora. A few more such days, and ice will be in demand again.

MONTANA.

Courier April 25: THE PROSPECT.—Now that the last remaining vestiges of the late severe winter have disappeared from the valleys, and the cheering news comes from all quarters of the excellent prospects in view for a season of unexampled success and prosperity, we are assured that all branches of business—agricultural, mechanical and commercial, will receive such an impetus during the summer that will place Gallatin county far in advance of her present position, and demonstrate that it is without rival in the Territory in the wealth-producing resources. Throughout her entire extent improvements are being rapidly consummated, and new developments in progress which will end in establishing this fact without leaving the slightest room for cavil or doubt. Situate in the finest agricultural region of the North-West, it has, with the rudest and most primitive appliances, yielded hitherto such enormous crops of cereals, as has proven her to be equal to, if not superior to any of the grain-producing States in her susceptibility to agricultural development and improvement, and the people are fast realizing this important truth.

OREGON.

Oregonian, May 4: INJURY TO FRUIT.—From a private source we learn that the fruit prospects of Lane county have been materially injured by the extremely severe frosts of the past week. The peach producing portions of that county have sustained considerable damage from the late frosts. Our informant estimates that not more than one-half the usual crop of peaches will be gathered in consequence.

WHEAT.—We are informed by Col. Chris. Taylor that there has been sown in Yamhill county, the present year, about one-third more wheat than has been any previous year. Crops are flourishing. The fruit crops have been slightly damaged by the cold nights.

TILLAMOOK county contains an area of about two thousand square miles.

Railway Progress in Russia—Manifest Destiny.

Russia is making advances in her system of railway communication. It was said two or three years since that Russia was "railway mad." If such was the case there is much method in her madness, and her vagaries have been of much benefit to her in every point of view.

The government, by placing the snow-bound and mud-bound interior in rapid and easy communication with the ports, has enabled Russian manufacturers and agriculturists to develop their respective industries with the most wonderful results; and the consequence has been that railway extension is still regarded with the highest favor.

Yet with all that has been done, there is ample room for future progress in this direction. The extent of the Russian Empire is larger than that of the United States, and, like these States, extends from the Atlantic to the Pacific. As yet she has but about 9,000 miles of lines, while the United States has some 65,000. It is also noticeable that, in Russia, as elsewhere, production, industry and the general improvement of the masses, keep equal pace with the extension of the iron road.

In view of these facts there is nothing unreasonable in presuming that Russia will continue to press forward her railway system, with even an accelerated ratio, until every part of that magnificent empire shall be bound together and consolidated by this great annihilator of time and space. Thus conditioned, the arts, sciences and industries will soon become as fully developed in Russia as upon the most favored portion of Central Europe; for the Russian, with equal facilities, is not much behind the native of any other portion of Europe, in anything which goes to make up a great and progressive people.

There is one significant fact, which has been observed in the Russian railway system, and that is that her railway gauge has been studiously fixed so that it cannot be used by the rolling stock of any other part of Europe. Under these circumstances, in case of a war between that power and any other European nation, her railway system will be of no account to her enemy in pushing his conquest over the border, while she herself will enjoy its full advantages to the very extent of her domains.

The late German-Franco campaign would have been an utter impossibility, had Napoleon imitated the Czar in that respect. In that campaign Germany with all of her rolling stock, fitting the French tracks and the enormous resources of her shops and artisans, could not have laid siege to Paris, had she not impressed an immense amount of the same material belonging to the Austrian Empire, which she from time to time found within her borders, and confiscated at an enormous cost for settlement with their legitimate owners.

This policy on the part of Russia is manifestly a peaceful one—all she wishes is to be "let alone," and for that she is taking security in a most efficient manner. It may be observed, however, that while she is thus rendering herself impregnable at home, she is also placing herself at great advantage in her Asiatic aspirations. Her railroad system will be brought to the very borders of her Asiatic neighbors, who will thus be placed absolutely at her mercy, while the allies of those nations will be compelled to operate to great disadvantage for the lack of such facilities.

The manifest destiny of Russia is as sure in its ultimate domination over Europe and Asia, as is that of the United States over every portion of the American Continent.

DOVER STRAITS.—The question of getting across the British channel without going in steamboats has agitated the English mind for many years, and a number of schemes have been proposed and abandoned. Recently a company has been incorporated in London, with the intention of connecting France and England by a tunnel under the sea. The sum of £2,000,000 is to be used in testing the feasibility of the plan, and if the experimental work proves successful, both countries are expected to join in pushing the enterprise to completion as quickly as possible.

Farming Machinery.

To give our readers something of an idea of the vast machinery requirements of the grain-growing and other agricultural interests of the Pacific coast, we have taken the pains to ascertain from a single house in San Francisco, the amount of machinery actually on hand at the beginning of the season's campaign and the cost of the same, and the further cost and extent of recent importations from the Atlantic side to meet the wants of the present season.

We find that Treadwell & Co. have recently purchased over ninety thousand dollars worth of Hoadly's Portable Engines, Russell's Separators and Haines' Headers. This amount was in two lots, and was the balance of the stock held over by the old firm last year. This purchase is in addition to \$100,694 of these three harvesting machines purchased by the firm, when they reorganized in January last. Thus we see that one agricultural importing house, has (or did have) on hand for this season about \$200,000 worth of these three kinds of harvesting machines, namely: the Header the Thresher and the Portable Engine. When we consider that this firm hold probably three times that amount in value of other agricultural machines, and that there are three or four other importing houses in the same business, one can form some idea of the extent of this business. Yet the stock on hand is by no means in excess of the demand, and most houses, including Treadwell & Co., are daily receiving Mowers, Reapers, Horse Rakes, Hay Cutters, etc., by railroad, in order to meet the wants of their customers.

The Novelty Glass Cutter.

The little device shown in the cut is intended to take the place of the more expensive diamond glass cutter now in use, and will perform its work as readily and with equal exactness, while the original cost is much less. The indentures



shown are of different sizes for different weights of glass. The cutter is a small piece of carbonized steel which revolves on a pin at the end of the handle. It is easily managed and requires much less skill than the diamond point for the exactness of position does not matter so much. The roller is placed on a piece of cast iron which is all in one piece, so there is no danger of the handle becoming loose and rickety.

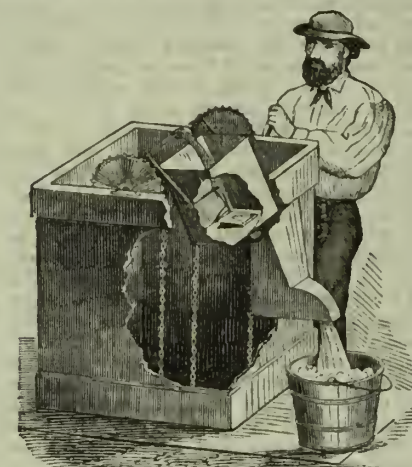
This machine will be found very useful, from its cheapness, in the country where glass can be cut and fitted without waiting for a glazier to come around. In fact, a little tool like this is invaluable, and should be in every household, for its applications are numerous and its cost very little. Weister & Co., No. 17 New Montgomery street, will send sample cutters to any address, post paid, for 75 cents in stamps.

SOCIAL PECULIARITIES OF ALASKA.—Alaska has social wonders as well as other phenomena, which are not as those of other lands. A gentleman who has recently returned from Sitka, says that the week before he left he witnessed a carnival such as could not be seen in any other part of the United States. The entire population marched in procession on the opening day, and during the remainder of the week no person appeared on the street unmasked. In every house jollity and good cheer prevailed, and Russian and Siwash, American and Tanton, indulged in masked balls each evening. This week is kept as a carnival week each year by the Russians, and they indulge in amusements to their heart's content. Notwithstanding the excitement, there were no quarrels or disorderly conduct apparent.

The street cars of London are differently arranged from those in use here; they have seats inside and out. The track is a flat strip of iron, with a groove for the flange of the wheel to run in. This strip offers no obstacle to vehicles, as it is exactly level with the pavement, not sunk, and does away with some of the objections of our system.

Ball's Water Elevator.

Our illustration represents a novel device for drawing water from wells, the invention of Mr. Jno. A. Ball, of Grass Valley, in this State. An ordinary curb or box is used over the well across the upper open end of which a shaft which is turned by a crank in the usual way, passes. This shaft carries two chain pulleys a short distance apart and around each of these pulleys a linked endless chain passes. The buckets are secured to these chains at various points, as many being used as desired. Each of these buckets have a hole in its bottom which is covered by a clapper valve of ordinary construction. The buckets are connected with the chains at a point below their middle line, and a link connects their upper end with a cross bar which connects the chain so that when they are being lifted by the chains they hang vertically. A lever passes down into the bucket and is connected with a cross rod near its lower end. The lower end or short arm of this lever is attached to the clapper valve above mentioned, while the upper end or long arm is secured to a cross-rod which connects the chains above the bucket. Now it is plain that as soon as the bucket arrives at the pulleys the links as they strike the circle keep the buckets in a perpendicular position until they begin to draw downward upon



BALL'S IMPROVED WATER ELEVATOR.

the reverse side of the pulley, and the same movement causes the lever to lift the clapper valve and allow the water to pass down through the spout, seen beneath the bucket, and into the curb-spout while the bucket is held in the vertical position, after which it is carried over the pulley and down into the well again.

By this means the water is delivered without waste. The inventor claims that the water from wells can be drawn cooler for the reason that the buckets take it from the bottom. The action of the chain and buckets keep the well ventilated properly, and the whole apparatus can be moved from one well to another easily, there being no pulley or other machinery below. This obviates all necessity of going down the well to make repairs or putting in machinery, as such labor can be performed at the surface. The bucket can be lowered backwards into the well so as to allow the water to rise through the valve into the bucket, thus permitting of a quarter or a half of a bucket full being raised as desired. The whole arrangement is simple and effective. All of the good qualities of the "Old Oaken Bucket" are preserved and its bad qualities made good. As a means of drawing water from an open well it is certainly valuable. Mr. Ball has a United States Patent upon this elevator which he is now reissuing through the Scientific Press Patent Agency.

ERUPTION OF VESUVIUS.—Old Mother Earth, after somewhat forcibly calling our attention to the fact that there was something else than railroads, mining stocks and Goat Islands to think about, has gone after the Italians and woke some of them up from their *dolce far niente* to see Vesuvius once more in a state of eruption. Dispatches from Rome state that a number of persons were killed by the lava, which burst up through the ground under their feet. The town of Torre del Greco was in so much danger, that all the inhabitants fled. Naples' dispatches describe the scene as wonderfully grand, and say that the ashes and lava threatened the villages on the mountain side. On the 27th ult., the lava-stream had already reached Sebastian, and threatened other places. The consternation of the neighboring towns is extreme, and earthquakes are the order of the day.

Tule Land Reclamation.

The floods and high water of the past winter, came just at the right time. We were introducing a system of reclamation by levees and ditches, that really was not adequate for complete protection. Not that the system adopted was particularly faulty, but that we had not comprehended the extent and dimensions—and in some instances the proper position of the levees and embankments.

It is better therefore that the proof of any inefficiency be known now, than after we had completed an imperfect system of works. It is evident that when the banks are severely washed by heavily impinging waves caused by passing steamers, the levees should be further back from the immediate bank of the river.

This gives a broader belt of land from which to take the necessary earth for the levee, and by leaving a few feet in width directly upon the river bank wholly untouched, gives the levee ample protection against wave washings and presents a good formation for the necessary coffer-dam, for keeping out the high tide during the construction of the grand levee.

A Strong Nation.

The census of 1860 gave the total property values of the United States at \$16,000,000,000. The census of 1870 makes a return of nearly \$32,000,000,000. Thus the wealth of the nation had about doubled itself in a decade during which the country was convulsed by a great civil war, involving an expenditure, to both sides, of not less than \$6,000,000,000, and a vast destruction of life and property. Seven years after this terrible struggle, the total of national, state, county and municipal debts is only \$3,271,874,768, and the country sustains a total tax of \$688,520,435. These figures give an impressive idea of the financial strength and wonderfully rapid development of the United States, in view of which, the National debt seems a light affair. The showing is the more remarkable when we reflect that this debt has been reduced at a rate that would extinguish it in twenty years, while permitting yearly reduction of taxation. All the blunders of all the politicians cannot repress energies so boundless, though they may prevent their fullest and healthiest action.

HARDEN THE NECKS OF YOUR TEAMS.—Some horses have tender skins, and the harness will sometimes gall them cruelly, in defiance of all means to prevent it. But many times the true cause is attributable to a bad collar, bad harness, or to a good harness improperly fitted to the animal. A yoke of bows that do not fit the oxen well will often gall them and unfit them for labor, when, if these things were as they ought to be, they would work with far more ease, and their skin would not be galled. When a harness or a yoke of bows do not fit properly, and their skin is liable to be galled, bathe those parts before they are galled with cold water, until the outside skin appears to be quite soft, and then bathe the part with a strong decoction of white oak bark. Let this be done every day, and the skin will soon become harder than it usually is. A little care in preventing an ill, is far better than much labor and skill in curing it; or in endeavoring to obviate its injurious effects.—Working Farmer.

HENS AND COWS.—A correspondent of the Mass. Ploughman asks how many hens equal the profits of an average cow per year; to which the Editor replies as follows: That depends very much, perhaps chiefly, upon the management. Some farmers manage to get a profit of fifty, and in rare cases nearly a hundred dollars per cow, while others scarcely make a cow pay. Some poultry men and many boys who devote their time and attention to it make more than a dollar per hen, while others hardly do more than to "make both ends meet." So you see it is hard telling. Taking the average of fair management we should say about twenty-five. But with first rate management of hens and poor management of cows it would take a less number. With first rate treatment of cows and neglect of the hens it would take many more.

A SWEDISH Arctic Exploring party has recently brought some remarkable meteoric stones from Greenland, the largest of which weighs 12 tons, and has a cross section of 42 square feet in the largest part.

USEFUL INFORMATION.

Facts About Glue.

The best method of preparing and using a substance which enters so largely into wood working processes as that above named, is a matter which should be thoroughly understood by those who have occasion to handle it. Some difference of opinion has existed on the question whether an admixture of carbonate of lime, or Paris white, which is the form in which it is generally employed, is an improvement to the quality of the glue. The most reliable experiments, however, have apparently established the fact that if very fine and pure Paris white is used, in limited quantity, and thoroughly incorporated with glue, the result will be highly advantageous, not only the appearance but the sticking quality also being improved. Bone dust has been proposed instead of Paris white, but its gritty nature is an insuperable objection; it refuses to unite with the glue, and renders it less serviceable. Similar injurious effects have resulted from employing certain chemicals, such as carbonate of soda, sulphate of zinc and oxalic acid, which have been experimented upon in compounding an opaque glue.

Transparent glue may be tested by holding it to the light, when it should show no specks, but be perfectly clean and clear. When immersed in cold water it will, if of the best quality, swell without melting, and when dried will return to its former size. After being swelled in cold water, its tenacity may be increased and liability to injury by dampness prevented by immediately immersing it in linseed oil, and heating it until dissolved. When dry, it will be proof against moisture.

In preparing glue for use, it should be first cut into small pieces, and immersed in cold water for about twelve hours. It is then placed over a fire and the temperature gradually raised until the glue is all dissolved, the softening having been accomplished by the previous steeping in cold water.

A strong liquid glue is made by combining three parts of the glue with eight parts of cold water, letting it stand for a few hours to soften the glue, then adding half a pint of muriatic acid and three-fourths of a part of sulphate of zinc, and keeping the whole mixture for ten or twelve hours at a heat of 185 degrees Fahrenheit. When cool it will remain liquid, and is highly recommended as an adhesive agent were wood, crockery or glass is to be subjected to its action. A superior quality of liquid is also obtained by dissolving gelatin or dextrin in acetic acid and alcohol. The best liquid glues, it has been found by scientific analysis, require to be surrounded by tepid water to make them assume the liquid form; those which present that condition at an ordinary temperature being usually of an inferior grade.

A somewhat novel test of the quality of glue is described by an English writer, who proceeded on the hypothesis that the glue which will take up most water is the best. He took 50 grains of glue, dissolved it in three ounces of water in a water bath, and when dissolved left it for twelve hours to gelatinize. He then placed an ounce chip box on the surface of the gelatin, and put shot into the box until it sank so far as to bring a mark previously made on the side to the level of the gelatin. The comparative strength of the different kinds of glue thus tested is denoted by the amount of shot which each will sustain before the mark is brought down to the surface. The finest glue tried by the experimenter referred to bore up six ounces of shot at a temperature of 58 degrees.

For cabinet makers' use, black glue is often selected; but the amber colored article has been proved by thorough experience to be the most suitable for that kind of work.—*Mechanic and Inventor*.

BRILLIANT ACHIEVEMENT IN WOOL MANUFACTURE.—A story is told by English papers which, if true, or nearly so, very forcibly exemplifies the near approach of perfection in woolen machinery, so far at least as the annihilation of time is concerned. The story is to the effect that a gentleman in Newberry, England, recently made a wager of \$5,000 that at eight o'clock on a particular evening he would sit down to dinner in a well-woven, well-dyed, well-made suit of clothes, the wool of which formed the fleece on sheep's backs at five o'clock that same morning. Two sheep were shorn; the wool was washed, carded, stubbed, roved, spun and woven; the cloth was scoured, fulled, tented, raised, sheared, dyed and dressed; the garments were made. At quarter past six he set down to dinner, at the head of his guests, in a complete damson-colored suit—thus winning the wager with one hour and three-quarters to spare. In this achievement the improved sewing machine is entitled to a full share of credit.

A HINT FOR SETTLERS.—Eighty acres is all that can now be held under the homestead act on the even sections within thirty miles of the railroad line, the odd sections being railroad land, except such as are ready secured by pre-emption. A pre-emption claim is only good to the original settler, until complete, or if conveyed to others, must run the regular time without counting the original settler's time in such purchase of an incomplete pre-emption right. One hundred and sixty acres, however, can be pre-empted on government land within the railroad line, by paying \$2.50 an acre.

Useful Hints.

Why are some things of one color and some another? As every ray of light is composed of all the colors of the rainbow, some things reflect one of these colors and some another.

Why do some things reflect one color and some another? Because the surface is differently constructed, both physically and chemically, and therefore some things reflect one ray, some two rays and some none.

Why is the rose red? Because the surface of the rose absorbs the blue and yellow rays of light, and reflects only the red ones.

Why is the violet blue? Because the surface of the violet absorbs the red and yellow rays of the sun and reflects the blue only.

Why are some things black? Because they absorb all the rays of the light and reflect none.

Why are some things white? Because they absorb none of the rays of light, but reflect them all.

What is the cause of the wind? The sun heats the earth, the earth heats the air resting upon it; as the warm air ascends the void is filled up with a rush of cold air to the place, and this rush of air we call wind.

HINTS ON HOUSE BUILDING.—A paper on this subject, read by Edward Roberts, F. S. A., before the Royal Institute of British Architects, closes as follows:—

1. Never allow pervious drains in pervious soils.
2. Never allow a cesspool or drain near a well.
3. Never select gravel as a building-site if well drained clay can be obtained.
4. Never allow drinking water to be drawn from a cistern supplying a water-closet.
5. Never allow waste-pipes to be inserted into water-closet traps.
6. Never allow rain-water to run to the ground if it is required above.
7. Never allow water to stand in pipes exposed to frost.
8. Never allow pipes to be fixed so that they cannot empty themselves.
9. Never ventilate except by pipes or tubes; inlets and outlets being of equal size.
10. Never use glazed earthenware pipes for upward flues.
11. Never allow chandeliers to be the exclusive light merely because it has been customary.

The following extraordinary case of spontaneous combustion is related by the *New York Insurance Journal*: A lady watching at the bedside of her husband, was astonished, about midnight, to perceive flames burst from the surface of a dressing-table from no apparent cause. Upon the table was some writing paper and the table-cover, with an open newspaper spread above them. Although alarmed, the lady was not unnerved, and cast the burning mass into a contiguous vessel, where the flames were soon extinguished. In searching her memory for a cause for this perilous incident, she remembered that a day or two previously, she had saturated some linen with sweet oil to be laid over a blister, and had left it for a short time upon the table, occasioning a grease spot on the cover. The paper was laid upon this spot. Probably, accelerated by the temperature of the room, combustion commenced on the greased cloth, communicated to the paper, and slumbered until the oxygen of the atmosphere was the final cause of the flame.

POTATOES A CENTURY AGO.—Here is some information about the status of potatoes a century ago: This root increases prodigiously, and is very proper for feeding and fattening cattle. They are boiled in water, and require but little boiling, though they may have been kept two months in the store. Cattle eat them raw, but for the table they are wholesome boiled. I earnestly recommend the culture of this plant to husbandmen, as it is not only excellent food for cattle but good for men in years of scarcity. After a little use the taste becomes at least as agreeable as turnips, and particularly if the potatoes are boiled with bacon and salt pork. The consumption of them in the English islands is astonishing, and many are eat in the French provinces. They yield a very whitemeal, which mixed with wheat meal makes good bread. I have eat it when there was no more meal in it than was necessary to make it rise.

ARTIFICIAL INCUBATION.—Those wiseacres who are forever puttering over egg-hatching machines, imagining they are going to beat mother nature, will finally learn to respect her ways. An egg has been happily pronounced a masterpiece of creation, but it is no more so than is a feather. The covering of birds combine in a wonderful manner, lightness and complete ventilation. It is a first rate non-conductor of heat, and repels dirt. Then the vital fires, consuming grain for fuel, keep up a heat gauged with more nicety than the clap trap of valves and self-regulating lamps can ever attain. We admire your ingenuity, inventors, but we want none of your artificial appliances so long as good motherly biddy is available.—*Poultry World*.

The depopulation of the Arctic coasts by the removal of the chief means of subsistence of the inhabitants is a question involving only a short time, if the rate of destruction of the seals and walrus is not soon diminished.

The cost of leeches, sold in Europe, exceeds \$10,000,000 per annum. The finest are said to come from the Murray River, Australia.

GOOD HEALTH.

Sleeping.

It is nothing short of murderous for one person to sleep habitually in a room less than twelve feet each way; and even then the fireplace should be kept open, and a door ajar, or the windows raised at bottom, or lowered at top, (both better;) this creates a draught up the chimney, and carries off much of the foul air generated during sleep. A little fire, or a lamp, or jet of gas burning in the fire-place, increases the draught. As the air we breathe is the chief agent for removing all impurities from the blood, the more effectual as it is purer, it must be plain to all that the room in which we spend a clear third of our entire existence should contain the purest air possible, and that this must have an immense influence on the health. Hence, our chambers should be large and airy—the higher above the ground the better—with windows facing the south, so as to have all the benefit of sunlight and warmth, to keep them dry and cheerful. Besides a few handsome pictures or paintings on the walls, illustrating what is beautiful and elevating, there should be no furniture except a table, a dressing bureau, and a few chairs, all without covering. With the exception of the bedding and a clean dry towel, there should be no woven fabric, neither carpet, curtains, nor hanging garments; for these, especially if woolen, retain odors, dust, dampness, and seeds of corruption and disease for months. There should be a hearth-rug at the bedside, to prevent the bare feet from coming in contact with the cold floor, on getting out of a warm bed. No liquid except a pitcher of cold water should be allowed to remain five minutes in a sleeping-room. The deadly carbonic acid gas which comes from the lungs at every outbreathing of the sleeper, rises to the ceiling in warm weather, but falls to the floor when the room is freezing cold. Hence, in summer, the purest and coolest air in a room is near the floor; in winter the foulest.

To Sleep Soundly.

With many the inability to sleep, as a growing habit, is the first step toward certain madness; in every disease it is an omen of ill. Hence, to cultivate sound sleep, do not sleep a moment in the daytime; go to bed at a regular hour, and never take a "second nap" after waking of yourself in the morning. Take nothing after dinner but a piece of cold bread and butter, and one cup of hot drink—not China tea, as it makes many wakeful. Never go to bed cold or very hungry, nor with cold feet. Read nothing after supper, listen to nothing, talk about nothing of a very exciting character; avoid carefully every domestic unpleasantness, as to child, servant, husband, or wife. Let no angry word be spoken or thought harbored for a single instant after tea-time, for death may come before the morning-light. Grown persons generally require seven hours' sleep in summer, and eight in winter. Few indeed, except invalids, will fail to sleep well who go to bed at a regular early hour, on a light supper, in a large room, and clean, comfortable bed, if there is no sleeping in the day-time, and not more than seven hours in any twenty-four are passed in bed. One week's faithful trial will prove this. Children, and all persons at school or engaged in hard study, should take all the sleep they can get, and should never be waked up in the morning after having gone to bed at a regular early hour. Every humane parent will make it a religious duty to arrange that every child shall go to bed in an affectionate, loving, and glad spirit. If wakeful during the night, get up, draw on the stockings, throw back the bed-cover to air it, walk the floor in your night-gown, with the mouth closed, all the while rubbing the skin briskly with both hands, until cooled off and a little tired. Except from August first to October first, in fever and ague localities, a chamber window should be open two or three inches in length.—*Dr. Hall, on "Sound Sleep."*

COLD ON THE LUNGS.—If a cold settles on the outer covering of the lungs it becomes pneumonia, inflammation of the lungs, or lung fever, which in many cases carries the strongest man to his grave within a week. If a cold falls upon the inner covering of the lungs it is pleurisy, with its knife-like pains, and its slow, very slow recoveries. If a cold settles in the joints, there is rheumatism in its various forms; inflammatory rheumatism, with its agonies of pain, and rheumatism of the heart, which in an instant sometimes snaps the cords of life with no friendly warning. It is of the utmost practical importance, then, to know not so much how to cure a cold as how to avoid it. Colds always come from one cause—some part or the whole of the body being cooler than natural for a time. If a man will keep his feet warm always and never allow himself to be chilled, he will never take cold in a lifetime, and this can only be accomplished by due care in warm clothing and the avoidance of draughts and undue exposure. While multitudes of colds come from cold feet, perhaps the majority arise from cooling off too quickly after becoming a little warmer than is natural from exercise, or work, or from confinement to a warm apartment.—*Wood's Household Magazine*.

POISONED AIR, that so frequently gains access to rooms from the sewers, is the cause of many an attack of fever. All contamination from this source may be avoided by relieving the pressure on the traps of the waste-pipe by means of a tube communicating with the open air at the top of the house.

DESTRUCTION OF THE GERMS OF DISEASE.—As the result of a series of experiments on the destruction of low forms of life by heat, Dr. Crace Calvert demonstrates that the germs of disease will withstand a temperature of 300 degrees Fahrenheit. Exposure to such a heat as this injures the fibers of all kinds of cloth so seriously that they are unfit for further use. It is therefore evident that the mere agency of heat cannot be depended upon for the destruction of the germs or corpuscles attached to the clothing of persons who have suffered from any contagious disease.

The necessity for a change in opinion regarding the power of chlorine gas to accomplish this purpose is urged in a recent report of the New York Board of Health on the disinfection of clothing and rooms that have been exposed to contamination by small-pox. In the report in question carbolic acid is especially recommended for the disinfection of clothing and bedding, and sulphurous acid gas prepared by burning sulphur for the disinfection of rooms. The latter substance especially seems to have the power of utterly destroying the germs of small-pox, while chlorine frequently fails altogether or only accomplishes the object in an imperfect manner.

TREATMENT OF SUN STROKE IN INDIA.—A late writer in *Public Opinion* says: "On one of the very hot days we had recently no fewer than nine men were struck down by sun stroke in the Lahore Central Jail. They were all quite insensible, and only able to breathe in the stertorous way peculiar to the ailment. The Superintendent, Dr. Lethbridge, had them laid out in a row on the cool floor of the Hospital, and there watered them copiously and continuously for five hours by means of bheeties with mus-sucks, before much improvement was perceptible. Every man recovered, and it is to be noted as a circumstance of considerable importance, that although all the cases were of the most serious kind, the simple remedy of a continuous and long continued supply of cool water was at last sufficient. The remedy, continued only for half an hour, and perhaps interrupted every time the mussuck was empty, would evidently have been of no avail. We recommend the account to the attention of all travelers, and, indeed, of every one liable to be exposed to the heat of the sun."

TREATMENT OF RHEUMATISM.—*Cassell's Household Guide* says the treatment of rheumatism should vary, according as the rheumatism affects the muscles or the joints, and relatively to the age of the patient, and the general state of health. People of a rheumatic constitution may greatly save themselves by care in regard to a few particulars. First, the avoidance of exposure to cold, and especially to cold and wet together—flannel and other kinds of warm clothing being obviously proper. Their food, while it should be nourishing, should be simple. Beer and porter, as a rule, should be avoided—they are rheumatic drinks. When the patient can command a change of climate, one that is mild, uniform, and above all, dry, will be the best. For rheumatic pains in the muscles, as of the back or neck, one of the best remedies is to cover the affected part with a piece of flannel, and rub it over with a hot iron every night before going to bed.

HEALTH OF FARMERS.—There are seven reasons why farmers are healthier than professional men, viz:

1. They work more and develop all the muscles of the body.
2. They take exercise in the open air and breathe a greater amount of oxygen.
3. Their food and drinks are commonly less adulterated and far more simple.
4. They do not overwork the brain as much as professional men.
5. They take their sleep during the hours of darkness, and do not try to turn night into day.
6. They are not ambitious and do not wear themselves out so rapidly in the fierce contest of rivalry.
7. Their pleasures are simple and less exhausting.

SEVERED TOES REPLACED.—A writer in the *Wilmington Commercial* says: In relation to the man whose toes were cut off, and after conveying them nearly two miles to his home and having the use of them afterward by being replaced, you wish to know if there ever was anything on record similar to it.

In reply, I would state that in 1855, while playing with a hatchet in the yard, I cut the two fore fingers of my left hand entirely off. They remained off till Dr. Baker arrived, when he sewed them on nearly one hour afterward—the same doctor that replaced the toes.

The hatchet being dull, it tore the fingers more than to cut them clean off, consequently it was more difficult to unite them, but for the past sixteen years I have had free use of them both, and the marks of the wound are scarcely perceptible.

THE TEETH in the insane are prone to undergo certain changes. Dr. Langdon Down, who read a paper on this subject recently before the Odontological Society, states therein that from the examination of nearly one thousand cases he has found that he could in the majority of instances state the period at which the imbecility or insanity began.

THE INSANE in the Surrey County Asylum, England, have been treated to a course of private theatricals with excellent results. The patients were spectators, not performers.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:
Saturday, May 11, 1872.

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Choice Stock.

The purchasing and raising of blood stock, has not only become a matter of extensive interest, among the regular stock men, but many importations of choice animals have been made by those who might more properly come under the head of amateur farmers.

Some of the best blood from the stables in the Atlantic States is represented here, while the draught horse and racer of old England have their blood relations on our farms and ranches.

RECENT experiments in England have shown a net profit of \$105 per acre upon land that was systematically irrigated; whereas, upon similar land of the same tract, when the irrigation was omitted, the net profit was only \$45 per acre. The "Great American Desert," that once occupied so large a space on the maps of Western Territories, will nearly all be made productive by irrigation.

DURING the month of March nearly 600,000 pounds of grain were shipped from Marysville, Cal., to points over the mountains in Utah and Nevada.

ZANTE, the well-known Mediterranean island, is said to have exported over 25,000,000 pounds of currants the last year, and about 86,000 barrels of olive oil.

THERE are 17 pneumatic tube lines in operation in the city of London, varying in length from 980 to 29 yards.

Breeding and Rearing.

That the attention of farmers and others who have a taste for fine animals, is a good deal awakened to the importance of breeding from the best kinds of animals, is clearly apparent. This feeling is now calling forth the careful attention of the farmers to the blood of the animals from which they breed, as well as to the food and qualities which belong to the race from which they have been derived. While a great improvement may be reasonably expected from these causes, there is an error which is not unfrequently committed by those commencing to breed fine stock, which ought to be amended.

Breeding from good stock or pure blood is one thing, and rearing the animal to maturity is quite another. Many persons think, if they have a fine colt or calf of superior blood, that the more food it gets the better it will be. But this is a mistake. The young animal requires the milk only of its dam, if that is of an average quantity and quality. It is true they will as they increase in size, take more milk if offered them; and by such means their growth will be very rapid, and they will take on a great deal of fat.

A colt or calf, however, pampered in this way, has an unnatural growth; they are over-fed, and the muscles are not as well developed as in animals less stimulated with rich food. Nature is the great teacher, and those who neglect her counsels will be very sure to find out their mistake. A young colt, or calf, or lamb, wants nothing for some months after birth, but the milk of the dam and fresh pasturage, with free scope to leap and race at pleasure; thus stretching to the utmost every muscle, gaining strength, healthy development and symmetry, with every effort.

Over-feeding is not probably so common as under-feeding. But it is an error into which good farmers and good breeders sometimes fall. They have a fine young animal and they want to make it very extra, and high feed will often deceive pretty good judges. Many a common calf of low-blood grade, has taken a premium, not because it was the best, but because it was the biggest and fattest. By inquiry, it would probably be found that it had taken the milk of two or more cows, for a considerable part of the season.

The continuance of high feed for a few generations, with little exercise, will destroy the good qualities of any fine race of animals. They lose their symmetry and form, which depends on the proper action of the muscles and become barren and worthless.

Yellow Newtown Pippin.

EDITORS PRESS:—We forwarded by Wells, Fargo & Co.'s express, thirty-six pounds Yellow Newtown Pippins, for your especial benefit, and that they will arrive in good condition is the wish of yours truly,

CHAMBERLAIN & CHAFFEE.

Garrote, May 4, 1872.

The apples came to hand in splendid condition, and we are doubly glad to receive them just at this time. First, because it shows us that our patrons are mindful of us, though we may not be able to put in a personal appearance with our thanks for favors received, at the homes of over ten thousand six hundred readers of the RURAL. And, second, because it enables us to point out the locality where some of the best specimens of winter apples of the Yel. N. Pippin variety that ever came under our observation are grown.

Selection of Varieties.

Now is the time for those who may desire to determine upon the best winter varieties of apples for the supply of the great mining interior, to visit our markets, and determine from direct observation which are really the best keepers.

The specimens sent us are of a perfectly golden yellow, with flesh hard and crisp, and look as though they would keep in perfect condition for two or three months yet. We would here remark that we recently received a sample of the same kind of apples from Mr. Pomeroy, of San José, that were also particularly fine, and if we did not mention it at the time it was not because we didn't like apples then, as well as now, or because we did not appreciate the gift. We always do appreciate just such acts in our patrons. We don't expect to receive any as good as these two lots were, from any others source.

SURFACE manuring and cultivation are for grain, and in particular for fruit—buried manure and deep culture, for vegetables.

Fruit Packages.

EDITORS RURAL:—We claim to have taken a step in the right direction. The fruit growers of Pleasant Valley, Solano county, held a meeting, May 4th, and decided to ship their fruit in a uniform-sized box, the box to go with the fruit, and not to be returned. The size of the box agreed on is 12x21 inches, and 6 inches deep.

W. Cantelow was selected to ascertain the cost of such box, and the cost of freight on the same. There will be needed in this fruit district, this season, about sixty thousand boxes. W. C.

Pleasant Valley is about seven miles north of Vacaville, near the Putah Creek fruit country; famous for producing some of the earliest and best fruits of central California. We heartily commend the action of the fruit men of Pleasant Valley in their endeavors to inaugurate a system of fruit sales on the basis of selling the box with the fruit.

It will be a convenience to producer and consumer and do away with an immense amount of inconvenience that attended the old practice of returning the boxes, whilst the consumer will always receive his fruit in new, clean boxes, instead of the old, musty return boxes, of previous years.

Fruit Transportation.

The mode by which their sixty thousand boxes of ripe fruit are transported to the railroad station is: They buy the finest quality of spring wagons, especially adapted to carrying fruit, and costing \$700 each. To one of these they attach from four to six horses, and load corresponding to the strength of team. It is believed that the cheapest and best box for the new system will be one composed of "shakes" nailed to strong end pieces of sawed lumber. If the box is increased much in size over the dimensions named, it may be found well to add a centre piece of the same strength as the ends.

We would be pleased to hear at what price, the committee appointed for the purpose, are able to obtain the kind of box proposed. We would suggest that fruit growers buy the shakes by the thousand in package, and the sawed lumber of the right width and strength to hold the nails, and put them together whenever wanted. To transport the ready made boxes would be a very bulky freight, and boxes once used might as well be returned as to transport new boxes from San Francisco or Sacramento, or wherever else procured.

Venture a Few Seeds.

It is said in parts of Mexico where no crop can be depended upon unless the land is irrigated, the best planters, after they have sown their crops upon all the land capable of artificial watering, will put in a field of greater or less extent, upon the upland, where no water can be artificially applied. This they called planting a Dios—to God.

If the rains came, which they did once in three or four years, a good crop was taken from these high lands; if not, it was only the loss of a little seed and labor. So it should be, and indeed often is in California. We sow wheat so late, that but for the hoped for April and May rains, which are by no means certain, we would not expect to reap a paying crop; and thus, there are thousands of acres this year that have been sown a Dios—trusting in God for the "later rain."

And so of many other seeds than grain; keep planting as long as there is a hope that the seed will vegetate and make sufficient root to enable it to enter vigorously upon the season of no rain that is sure to follow soon. If it does not reach that stage, and dwindles from excessive drouth, it is but the loss of a few seeds and a little labor.

DOG DISTEMPER.—We are asked if we know of any cure for what is generally known as the dog distemper, among dogs; a disease that leaves them subject to involuntary spasmodic movements of the whole body, and yet otherwise apparently healthy.

We know of no better remedy, considering the low value of most dogs, than to cut off their tail two inches behind their ears.

CHERRIES.—This fruit is becoming more plentiful, of excellent quality and selling at 75 cents per pound.

STRAWBERRIES.—This staple fruit is in great abundance, and down to 10 and 12 cents per pound, retail.

Cultivation of the Sunflower.

A German paper thinks that the cultivation of the sunflower can be made profitable in Germany, and gives the following products as obtainable from the plant. The same reasons may be assigned for its cultivation in California:—

1. Table oil, from the seeds.
2. Food for poultry; the seeds, which are said to increase the number of eggs laid by hens eating them.
3. Oil cakes, (residue from pressing out the oil,) which, as well as the leaves of the plant, are good food for horned cattle.
4. The flowers afford sustenance for bees.
5. The stems furnish fuel, and give good coal for powder factories.

It is said also that saltpeter, hemp, potash, and even good paper have been manufactured from the stems and leaves. But the production of oil is the chief item.

The paper recommends sowing the seed in hills, about two feet apart, two seeds to a hill, one and one-half to two inches deep. If the farmer is unable to devote a special field to the plant, he can sow the seed around the edges of a potatoe, cabbage or corn field. The plant must have plenty of sun and strong soil. Only two to four branches must be allowed to each stem, the others being cut off. When the seed vessel has assumed a pale yellow color, it is cut off and the seeds are dried in the sun. They are crushed cold to extract the oil which is highly praised. One seed vessel can contain as many as 2,000 seeds; 100 lbs. of raw seed furnish twenty-five to thirty lbs. of shelled and prepared seed, and these thirty to forty per cent. of oil.

Ants on Trees.

EDITORS RURAL:—I was not a little startled at a suggestion made in your last week's issue, that ants were not injurious to the trees they infest, oftentimes in countless numbers. I have been trying all ways that my ingenuity could invent to keep them from my trees, and now to learn that they are rather a benefit than an injury, allows me to breathe more freely. I hope I may find the fact to be as you intimated. I shall give the matter close attention, however, under the power of a microscope and report the result, if you should wish it.

Elk Grove, May 6, 1872.

We are inclined to think our correspondent will find no resulting injury from the ants upon his trees. In consulting authorities we find that a writer in the Boston Cultivator says that in his experience he has been led to look upon the black ant as his best friend in the peach orchard, his only object in traveling up and down the tree being to destroy lice, which frequently cover the young and tender leaves of the peach trees.

We would be much obliged to our correspondent for communicating to us the results of his observations. Ed.

Intelligent Farming.

Intelligent farmers no longer confine their attention exclusively to the raising of cattle and grain. They find a well managed orchard or garden equally profitable, while it contributes greatly to the comfort and happiness of the family.

The full benefit of this general attention to fruit culture however, can only be obtained when it is skillfully and intelligently pursued. To plant a tree and leave it to take care of itself, can be expected to benefit no one, except it be he who does so, learning by repeated failures, the necessity of bestowing the right care and culture.

The climate of a great portion of the American continent, is preeminently adapted to the raising of fruit. The orchardist has every thing to encourage him to anticipate great success. With judicious cultivation there are few failures, and these only serve to stimulate an intelligent horticulturist to renewed efforts.

Horticulture is destined to take a high position in California. Much has been accomplished in testing the different varieties of fruit, and in determining the best soil, location, climate and exposure. We need, however, more facts bearing on these points, and still more some system for recording and comparing them.

A FANCY farmer sent in the following truthful report of his agricultural operations to the assistant assessor of the revenue tax: "Mr. K., my farming operations I have to report are as follows—'My cattle have eaten up my crops, and my hired men have eaten up my cattle.'"

The Wool King.

This individual like king cotton of a former day, has had "the top of his head taken off;" in other words, he stands considerably lower in the scale of values, than he did some two or three weeks since. It is quite evident there is not that absolute scarcity of wool in the world's markets that was reported and consequently prices are not advancing. On the contrary, there seems to be a difficulty on the part of the holders of wool in San Francisco, to maintain even present prices, and the tendency is every day downward.

There are now over 17,000 bales of wool in San Francisco awaiting sale and shipment east. These wools are being offered at prices ranging from 8 to 10 cents lower than two weeks since, and it is difficult to get takers, at even 40 cents per pound; and such small lots as find sale, are only the purchases of agents, for the purpose of supplying the immediate wants of manufacturers.

Manufacturers who make it their business to watch the supply of wools from the different wool producing and exporting countries, are quite as likely to judge pretty nearly as to the true situation of supply and demand, as the farmer of California who cares but little about either, so that he gets the very highest price the market affords. Now these manufacturers in view of the prospect as it now stands, instead of buying up California wools at forty-two and a half cents per pound, the price now asked by wool holders, prefer taking their chances to obtain their supplies at even lower rates, and consequently are not buying.

Wool-growers who are holding on for a rise to 60 cents and upwards, must bear in mind that the wool supply that has been pouring into Great Britain and the United States during the last month in view of probable scarcity, has actually caused an excess in quantity over that of the same date last year.

It must be further borne in mind, that in view of a gradual rise in the price of wools and woolen goods for the last two years, manufacturers have turned their attention to fabrics, composed in part only of wool; immense quantities of other and cheaper materials and fabrics are being manufactured and "shoddy" seems destined to be the crown of the wool king. These manufactures tend to lessen greatly the actual demand for pure wool, so that there seems really no very good reason why our wools should advance much if any beyond present values.

Brandy from Potatoes.

Once upon a time—as a novel writer might say—being in North Germany, we took a three hours' ride by rail to Dantzig, where potato whisky, or as it is called in that part of Germany, brandtwein—that is, brandy—is made. The proprietor has a farm of 600 acres, of which 300 are always in potatoes, and the other half in rye. The land is manured at every crop of potatoes.

He has forty horses, besides several pairs of oxen, and one hundred and twenty head of cattle tied up to fatten. The number that he is able to fatten depends upon their condition when he ties them up. When the animals are only skin and bone, it will take six months to fatten them. The whole of the animals, horses, oxen, cows, sheep, pigs, etc., are fed on the refuse of the distillery, as a part of their food—the fattening animals get nothing else.

The whole of the potatoes grown on the farm are used at the distillery. They are first boiled, then crushed and malt added; after which it is spread out on a hard cement floor, and ice mixed with it to cool it more rapidly. The mixture is then run into vats, in the cellar where it ferments; when completely fermented, it is pumped into the stills and distilled in the ordinary manner.

One hundred and fifty bushels of potatoes are used daily, and two hundred gallons of whiskey are made daily in summer, but considerably more in winter. The refuse amounts to about 15,000 quarts, and each feeding cow is supplied with from 110 to 130 quarts daily. The whisky produced is sold for six cents a bottle or about 46 cents a gallon, and is or seems to be, stronger than most American proof whisky. We tried it.

We learn from reliable authority, that the work of repairing the railroad between Vallejo, Davisville and Sacramento, will be commenced in earnest within ten days.

The Zinnia.

This is one of the most splendid of garden annuals, the double varieties being immense improvements on the single, and among the finest introductions for many years. The flowers are as large and double as the dahlia, which they somewhat resemble, and of the most varied and brilliant colors; blooming in great profusion and with continually increasing splendor from July until cut down by autumn frosts.

The seeds, which can be obtained of E. E. Moore, seedsman of this city, should be planted at any time, after the spring frosts, in the open ground, but the earlier the better. Start them in a seed bed, as they transplant without any difficulty. Finally, the plants should be set two feet apart in a strong, rich soil; and the perfect plant will attain a height of from two to three feet. They are wonderfully showy, and the different colored varieties, properly arranged, enables the propagator to make an exceedingly agreeable and tasty display of autumn flowers.

Condition of Winter Grain.

We have received the April Report of the Department of Agriculture, Washington, giving detailed statement of the condition of winter grain as it appears after one of the severest winters known for many years. We extract as follows:

The low temperature of the month of March, and accumulations of winter snow and ice, have



THE DOUBLE ZINNIA.

retarded the springing of vegetable life, and tinged with gloom the views of local reporters. Over a large area, at the date of returns, snow still covered deeply the grain-fields, and only conjecture, founded on the forwardness and vigor of plants at the opening of winter, and on the mechanical condition of the soil, and the severity of the season, could point to the probable status of the winter grain. The general tenor of reports carries the idea, not of sweeping destruction by freezing, but of injury by thinning out, by killing in spots and patches, and especially by retarding an early start and vigorous growth. In many cases the plants, apparently dead, were only sleeping, unpromising in appearance but firmly rooted, and ready, with favoring warmth and sunshine, to start into sure and steady if not rapid growth. Where the fields were drained, the soil deep and mellow, the casualties of winter have been unknown; where the seeding was done with the drill, on land having any fair degree of suitable preparation, almost absolute immunity from loss by freezing has been secured. It is strange that the use of the drill has not become universal. The fact remains that nearly all the wheat of the Eastern States, almost all in the South, much in the Middle States, and no little in all portions of the Western, is seeded by hand. The use of drills enough to supercede all the broadcast sowing of the country would secure in a single year increased yield sufficient to pay for them.

The April returns, as a whole, indicate rather more than average amount of destruction by winter-killing, retarded growth, and stunted appearance, but a sound conditions of the roots of plants in suitable soil or that covered uniformly with snow, which with favoring weather may secure a vigorous growth and a good yield. The droughts of summer always interfere, in a larger or smaller portion of the wheat area, with the proper time for seeding; those of last season were only a little more extended and severe than usual. Our climate is peculiarly subject to them, and this fact should enforce the more general draining, deepening, and mellowing of the surface soil, which alone, in the experience of the past, as reported each spring from almost every county in the country, would suffice to insure against the worst effects of drought upon our winter grain.

In Maine the ground was deeply covered with snow; but it was believed that the plants were safe. The snow was deep in New Hampshire on the 1st of April; the earth frozen, in the locality of our Hillsborough correspondent, "to the depth of seven feet." The small area reported in Vermont was generally promising when last seen in the autumn. In Massachusetts some reports of winter-killing are received. The few fields of wheat near Providence, Rhode Island, are flourishing; but rye is injured by freezing, the ground having been bare most of the winter; and rye in Kent County has been roughly treated by the winter winds of February and March, which have been unusually high. In Connecticut there has been much bare surface and severe weather, and the rye-fields present a somewhat unpromising appearance.

The reports from New York in the early part of the month were not very cheerful in tone, the snow and ice not having disappeared, but indicated a probable improvement, under the influence of fine weather, the plants being generally alive.

In Rensselaer county wheat, rye, clover, and timothy all appear to be dead, though we hope it may turn out better than that. It has been the hardest winter for seventy years. One-third of the potatoes frozen, and two-thirds of the bees dead. The heaviest teams crossed the river at Albany, the ice being three feet thick. Ground frozen from three and a half to five feet deep.

Most of the New Jersey returns represent the ground poorly covered with snow, while the temperature was low and the soil deeply frozen. In Morris county winter-grain was "much injured by freezing and thawing;" in Burlington "few fields have an average appearance, while many look worse than for seven years past."

The reports from Pennsylvania refer to the

two months too late to produce the best results. GEORGIA.—Hull: Good stand, but very backward. Snow six inches deep March 22. Never known before.

In Georgia eight counties report superior condition, twenty-eight a good prospect, two an average, and fifteen an unpromising appearance.

FLORIDA.—"The past winter will be remembered in Florida. I have felt colder weather here, but through January and February it was almost uninterruptedly cold, which is unusual here. The planters commenced planting corn the last of February, but, reason of the superabundance of wet and cold, the stands are not good and the crops are looking badly."

ALABAMA.—Very promising in some districts in others bad.

MISSISSIPPI.—Wheat a failure as usual, and red oats a perfect success—entirely rust-proof. Rye and oats fine. Attention turned to winter-oats, which do well. Red rust-proof oats a favorite.

Indications of increased attention to cereals appear in Texas, pointing to an enlarged area to be harvested this season. The fields are generally promising.

The appearance of wheat is generally unpromising in Arkansas. It is not a prominent interest and few counties are reported.

In Tennessee the early-sown wheat is generally in vigorous growth, while much that was sown in October and November was killed or injured by freezing. Careless preparation of the soil is given as another cause for unpromising condition in many places.

The accounts from Kentucky are quite various—some promising, others gloomy. A full drought prevented sufficiently early sowing. In some places where a good stand appears, the severity of the weather has prevented early and rank growth. Several counties compare the prospect favorably with that of last spring, and several present unqualified assertions of fine condition. On the whole, the average appearance is indicative of a fair crop.

Severe freezing and backward condition are reported from West Virginia. There is nothing to indicate an exceptionally poor crop.

A few quite unfavorable reports come from Ohio. Our Franklin correspondent had not seen a green field, and says there has not been rain enough in thirty-six months "to run in a furrow." Alternate freezing and thawing in March, in the flat lands of the northwestern part of the State, have wrought much injury. With good weather a fair crop may be expected. Of forty-nine counties reporting wheat, forty-one represent a comparatively unpromising condition.

Nearly all Michigan correspondents report rather an unpromising appearance of winter-grain, or the fact that the ground was frozen and deeply covered with snow.

The condition of winter-grain is included in reports from fifty-six counties in Indiana, of which thirty-nine are below an average.

Returns from fifty-eight counties in Illinois indicate a condition below an average in twenty-six counties; the remainder show either an average or a superior condition. In some of the more southern counties the warm weather was having a favorable influence.

Of seventy-six counties reporting in Missouri, forty-nine present comparatively unfavorable returns, four only superior condition, twelve good appearance, while the remainder are equivalent to an average.

Little winter-wheat is produced in Wisconsin, Minnesota, Iowa, or Nebraska. In Wisconsin but ten counties mention it, of which two return good condition, four average, one poor. Of nine in Minnesota, three report good or excellent, six unpromising. Of twenty-seven in Iowa, eight make a favorable report, four medium, fifteen unfavorable. In Nebraska, four counties report a good appearance, eight lower than average. In Kansas, twenty-five counties report wheat "badly injured," or "frozen out;" fifteen "poor," or equivalent terms; rye appears better, but is not much grown.

Returns from the Pacific coast are nearly all favorable, both in California and Oregon. From Oregon there is not an unfavorable report.

Perfecting the Raspberry.

Nothing serves to secure a perfect crop of raspberries so certainly as mulching the surface of the ground. It requires a moist surface to fully perfect the berry, because the raspberry bush is emphatically a surface feeder. It is for this reason that the surface of the soil should never be stirred to any considerable depth in order to keep down the weeds, after the fruit has set, because such stirring can only be made at the expense of great numbers of small fibrous roots that everywhere permeate the soil from the larger horizontal roots, upwards towards the surface.

Straw makes a good mulch for the raspberry, spread on thick enough to keep down the weeds, and if half rotten straw, it is all the better as it lies closer to the ground and better excludes the air and serves to retain moisture better than that which is airy and light.

The total number of acres of swamp land sold in the State of California, from January 1, 1868, up to December 31, 1871, was 790,793.

Horses and eggs are of no use until broken—and sometimes of little account then.



What Does it Matter?

It matters little where I was born
Or if my parents were rich or poor,
Whether they shrank at the cold world's scorn
Or walked in the pride of wealth secure;
But whether I live an honest man,
And hold my integrity firm in my clutch,
I tell you my brother, plain as I can,
It matters much!

It matters little how long I stay
In a world of sorrow, sin and care;
Whether in youth I am called away,
Or live till my bones of flesh are bare;
But whether I do the best I can
To soften the weight of adversity's touch
On the faded cheek of my fellow man,
It matters much!

It matters little where be my grave,
If on the land, or on the sea;
By purling brook, or 'neath stormy wave
It matters little or naught to me;
But whether the angel of death comes down
And marks my brow with a loving touch,
As one that shall wear the victor's crown,
It matters much!

A Grievous Disorder.

Lord Burleigh, in a capital letter of advice to his son, Robert Cecil, warns him against making matrimony a mere matter of money, "for," he quaintly says, "to choose an uncomely creature altogether for her wealth, will cause contempt in others, and loathing in thee. Thou shalt find to thy great grief that there is nothing more fulsome than a *she-fool*."

A literary gentleman, not many years ago, was married to a woman such as Burleigh describes. In the course of time the wedded pair rejoiced in the advent of an heir, which grew and thrived for a little while, but then grew sickly and seemed likely to die. The father observing the mother's method of treating the baby, or rather her utter want of method, declared his conviction that its illness was all owing to mismanagement, and the family physician concurred in his opinion.

A day or two after this declaration was made a neighbor called upon the mother and inquired what was the matter with the child.

"Oh," said the mother, "my husband and the doctor say it's got the mismanagement." A very grievous disorder is that! It is worse than teething, chicken-pox, measles, mumps, whooping-cough, and scarlet fever, all combined. It hurries hundreds of thousands to untimely graves or if they still live on it is only to be a curse to society, and to curse in their hearts the authors of their wretchedness. It is a disease that seems to be hereditary in some families, and epidemic in others.

To those parents whose righteous souls are vexed with children incorrigibly bad, we venture diffidently to suggest that the real trouble may be possibly "mismanagement."

For this dreadful ailment we know of one infallible prescription, and that was given long ago by an eminent doctor, a native of Tarsus, in the thirteenth chapter of his first letter to the Corinthians. We have known it to be tried in some of the very worst cases, and always with the happiest results.—*Ec.*

How to Enjoy Life.—It is wonderful to what an extent people believe happiness depends on not being obliged to labor. Honest, hearty, contented labor is the only source of happiness, as well as the only guaranty of life. The gloom of misanthropy is not only a great destroyer of happiness we might have, but it tends to destroy life itself. Idleness and luxury induces premature decay much faster than many trades regarded as the most exhaustive and fatal to longevity. Labor in general, instead of shortening the term of life actually increases it. It is the lack of occupation that annually destroys so many of the wealthy, who, having nothing to do, play the part of drones, and, like them, make a speedy exit, while the busy bee fills out its day in usefulness and honor.

In Manila 25,000 women and girls work at cigar making at average wages of seven cents per day.

It is the Fashion.

Thin, scraggy, badly made woman invented hoop-skirts, and puffed out dresses which gave the hips huge proportions, and they said, it is the fashion.

Beautifully-formed women, who require no stuffing, consented to the disfigurement, and they, too, said, it was the fashion.

Short little women invented high heels and high head-dresses, making the face in the middle of the body, and they said it is the fashion. Tall and graceful women, with a sigh said, it is the fashion, and so made themselves too tall, giving the dwarfs the stature, that nature, without high heels and high head-dresses, had bestowed upon them.

Women with large, flat feet, thick ankles, and low insteps said, we must hide our feet and ankles, and make women with small feet, well-turned ankles, and high insteps hide their feet and ankles. They invented long, dragging dresses, and said, it is the fashion. Then all women with dear little feet said, "Oh! dear, it is the fashion, and we, too, must wear long dresses."

That long dresses have a certain style about them is not to be denied, and a pretty woman can manage to show just a glimpse of a small foot, a high instep, and a well-turned ankle. Dresses with trains, may be worn in a drawing-room (the carpet supposed to be clean) and in a carriage, but in the street, dragging through mud and dirty water, making the stockings filthy, is the very height of folly and extreme of vulgarity. The opposite of cleanliness in woman is a crime so great that, like the absence of a law against parricide in the code of Lycurgus, it ought not to be supposed possible.

FASHIONABLE WOMEN.—Fashion kills more than toil or sorrow. Obedience to fashion is a greater transgression of the laws of woman's nature, a greater injury to her physical and mental constitution, than the hardships of poverty and neglect. The slave woman at her task still lives and grows old, and sees two or three generations of her mistresses pass away. The washer-woman, with scarcely a ray of hope to cheer her in her toils, will live to see her fashionable sisters all extinct. The kitchen maid is hearty and strong, when her lady, has to be nursed like a sick baby. It is a sad truth that fashion-pampered women are always worthless for all good ends of life; they have but little force of character; they have still less of power of moral will, and quite as little physical energy. They live for no great ends. They are dolls formed in the hands of milliners and servants, to be fed in order. If they raise children, servants and nurses do all save giving them birth; and when reared, what are they? What do they amount to but weak scions of the old stock? Who ever heard of a fashionable woman's child exhibiting any virtue and power of mind for which it became eminent? Read the biographies of our good men and women. None of them had a fashionable mother. *Lancet.*

WOMAN'S HAIR.—Dr. Benj. Godfrey has written a book on the "Diseases of the Hair." He says that a woman's hair may grow to the length of six feet, and that a young lady of Massachusetts refused a thousand dollars for her "cranial covering, which was only one inch short of this measurement." Four hundred hairs of average thickness would cover an inch of space. The blonde belle has about one hundred and forty thousand filaments to comb and brush, while the red-haired beauty has to be satisfied with eighty-eight thousand; the brown-haired damsel may have one hundred and one thousand, the black-haired but one hundred and two thousand. Few ladies consider that they carry some forty or fifty miles of hair on their head; the fair-haired may even have to dress seventy miles of threads of gold every morning. A German experimentalist has proved that a single hair will suspend four ounces without breaking, stretching under the process and contracting again. But the hair thus heavily weighted must be dark brown, for the blonde breaks down under two and a half ounces.

In Brittany a very curious matrimonial custom prevails. On certain fete days the young ladies appear in red petticoats, with white or yellow borders round them. The number denotes the portion the father is willing to give his daughters. Each white band, representing silver, betokens 100f. of rent; and each yellow band means gold, and stands for 1,000f. a year. Thus a young farmer, who sees a face that pleases him, has only to glance at the trimmings of the petticoat to learn, in an instant, what amount accompanies the wearer.

RELIGIOUS VALUE OF FLOWERS.—The Bible, the most valuable of all books, speaks of the Rose of Sharon, and the Lily of the Valley. Christ pointed to the lily for the purpose of illustrating and enforcing truth. The poet feels the inspiration of flowers, and employs them as rich materials. One speaks of never-fading flowers that smile upon the everlasting fields of Paradise, and another of the shady rills of Sharon, where the lily and rose contribute with their beauty and fragrance to the happiness of the devout. Their influence on the health and happiness of families, where cultivated, is proverbial. Were I to picture to myself a happy family, I would place all, parents and children, around an altar of devotion, where each one present was clad with the beauty of holiness, and took delight in cultivating a meek and quiet spirit; and as we always feel an inward influence corresponding with outward circumstances, I would have home beautified with walks and flowers, where parents and children could take recreation together, and drink in the inspiration of all that is beautiful. This would tend to the refinement of the sensibilities and purity of the moral feelings. Absolutely, we must surround ourselves with things beautiful and agreeable, or sink to a kind of heathenism. No duty is more pleasant than that of aiding such as seek assistance in the promotion of the happiness of their homes. Beauty and virtue always go together. To aid such as desire it in this way, I propose, from a large supply of beautiful flower seeds, to send to each person who will bear the expense of receiving it, a paper of Fancy Pink and Sweet William seeds, mixed. These pinks, embrace the finest varieties of the German, French, Italian, China, and Japan seeds of Pinks, and Sweet Williams of rare beauty and perfection.

"Who's Ahead?"—A gentleman asks the girls the following pointed questions: "Could you love a man who wore false hair on his head, when he had enough of his own? Who painted his face and improved his form as you improve (?) yours? Who pinched his feet with small shoes, his hands with small gloves, his waist with corsets; and then, as if he had not already deformed himself enough, tied a huge bustle to his back, and thrust tiny mountains of wire into his bosom?"

In reply to which a lady responds: "Could you love a girl who defiled her mouth with tobacco, and loaded the air with fumes of cigars? Who staggered home several times a week the worse for liquor? Who indulged in fast horses, bet high at races, and swaggered around the streets with questionable companions? Which picture wears the most alluring colors?"

We also see it reported that Mrs. Van Cott says if she had all the money ever paid for liquor she could buy every foot of land in the world. Very likely. And if she had the money paid by women for back hair she could buy every drop of liquor in the world.

BEE-CULTURE AND WOMAN'S WORK.—Adam Grim, of Jefferson, Wis., who is a most successful apiarist, commenced the season last spring with 285 swarms of bees, and increased the number by swarming to 646. These swarms produced within a fraction of 21,000 pounds of honey, which sold, strained, for \$4,100. The Jefferson County Union says:

"We often hear women say there is no remunerative employment for them. As an answer to this we would state that Mr. Grim has two daughters, who have each taken separate charge of an important part of the apiary. Miss Kate Grim has, by her skill and attention the past summer, earned \$1,200 net, and Miss Margaret Grim has earned \$1,400 net."

GOOD ADVICE.—Don't be discouraged if occasionally you slip down by the way, and others tread on you a little. In other words don't let a failure or two dishearten you. Accidents will happen, miscalculations will sometimes be made, things will turn out differently to our expectations, and we may be sufferers. It is worth while to remember that fortune is like the skies in the month of April, sometimes cloudy, and sometimes clear and favorable.

A MOTHER'S CHOICE.—Had I the choice of only four things (says a mother) to be taught my children, they should be: To sing well, to read well, to write well, and to sketch well. Perfection in all these will earn their possessor a maintenance in any country, and enable him to amuse himself or entertain company, whether it be under a rock in the desert, or upon a crag in the sea.

Young Folks' Column.

Angels and Boys.

It does seem a little inconsistent for a naughty boy to sing, "I want to be an angel." The difference is very great. We don't suppose we have in our family readers any really bad boys, but perhaps some of the good ones know where the following will apply; if so, let them make good use of it: "I want to be an angel," Bobby kept singing at the top of his voice, except when he was teasing the cat, spilling his milk, contradicting Bridget, or making mud-pies: "I want to be an angel, and with the angels stand." "That is all well and good when the time comes," cried Bridget, at last, quite out of temper; "but before you can get to be an angel, Bobby, you must just want to be a good boy. Good children is the stuff that angels are made of; mind that, sir. Put it in this way, 'I want to be a good boy, and with the good boys stand.' Then folks can know how much you mean it." Bobby did not like Bridget's view of the case, so he made up a lip and walked off.

WHAT FARMERS' BOYS SHOULD KNOW.—Every farmer's boy should know, sooner or later:

1. To dress himself, black his own shoes, cut his brother's hair, wind a watch, sew on a button, make a bed, and keep his clothes in perfect order and neatly in place.
2. To harness a horse, grease a wagon, and drive a team.
3. To carve and wait on table.
4. To milk the cows, shear the sheep and dress veal or mutton.
5. To reckon money and keep accounts accurately, according to good book-keeping rules.
6. To write a neat, appropriate, briefly expressed business letter in a good hand, and fold and superscribe it properly, and write contracts.
7. To plow, sow grain and grass seed, drive a mowing machine, swing a scythe, build a neat stack and pitch hay.
8. To put up a package, build a fire, whitewash a wall, mend broken tools and regulate a clock.

There are many other things which would render boys useful to themselves and others—these are merely a specimen. But the young man who can do all these things well, and is ready at all times to assist others, and be useful to his mother and sisters, will command far more respect and esteem than if he knew merely how to drive fast horses, smoke cigars, play cards and talk nonsense to foolish young ladies at parties.

TENDERNESS TO MOTHERS.—"Mark that parent hen," said a father to his beloved son. "With what anxious care does she call together her chicks and cover them with her expanded wings. The hawk is hovering in the air, and, disappointed in his prey, may perhaps dart upon the hen herself, and bear her off in his talons. Does not this sight suggest to you the tenderness and affection of your mother? Her watchful care protected you in the helpless period of infancy, when she nourished you, taught your limbs to move, and your tongue to lip its unformed accents. In your childhood she mourned over your little griefs; rejoiced in your innocent delights; administered to you the healing balm in sickness; and instilled into your mind the love of truth, of virtue, and wisdom. Oh! cherish every sentiment of respect for your mother. She merits your warmest gratitude, esteem and veneration."

HAPPY FOR THREE PINS.—We were lately riding in a 'bus, and there was a neatly dressed old lady who had on her lap a bundle of newly washed clothes. It was a windy, dusty day. Her newspaper wrappings but poorly covered her clean linen. She drew up one end, and the other was loose. She needed four instead of two hands to keep out the flying dust. We could wish she had a better covering. When we handed her three pins, it would have done your heart good to see how happy those simple pins made the old laundress. Had we presented her with five dollars they could not have done the duty of the pins. Her regular employment for months—perhaps for years—may have depended on the cleanliness of those pieces of linen. How little will make us happy, if we have a contented heart and never forget that we deserve so little!—*Rev. W. Van Dusen.*

DOMESTIC ECONOMY.

Relishes for Tea.

SPICED VEAL.—Chop three pounds of veal steak, and one thick slice of salt fat pork, as fine as sausage meat; add to it three Boston crackers, rolled fine; three well-beaten eggs; half a teacup of tomato catsup; a teaspoonful and a half of fine salt; a teaspoonful of pepper; and one grated lemon. Mould it into the form of a loaf of bread, in a small dripping-pan; cover with one rolled cracker; and baste with a tea-cupful of hot water and melted butter, with two tablespoonfuls of the butter. Bake for three hours, basting every little while (this makes it moist). Make the day before it is desired for the table; slice very thin, and garnish with slices of lemon and bits of parsley.

MELTON VEAL.—This is a standard dish at the Melton Races in England, and is composed of alternate slices of veal and ham. Butter a good-sized bowl; and slice as thin as possible six hard-boiled eggs, then line the bowl with the slices. Place in the bottom a layer of raw veal steak in thin slices, and sprinkle over it a small quantity of salt, pepper, and grated lemon-peel; proceed in the same way with thin slices of raw ham, but leave out the salt. Fill up the bowl in this manner. Cover it with a thick paste of flour and water, so stiff as to be rolled out. Tie a double cotton cloth all over the top and boil three hours, putting it into boiling water at the first, and keeping the water just below the level of the bowl. When cooked, take off the cloth and the paste, and let the veal stand until the following day; then turn it on to a platter, and cut very thin after it comes to the table; garnish with sliced lemon and parsley. It is "a dainty dish" to set before a king. It is also delicious as a side dish for dinner, and makes a good breakfast.

POTTED SHAD.—Cut a fine shad into three or four pieces, omitting the tail and head; place a piece in a small stone jar, sprinkle well with salt, and whole allspice, and whole pepper-corns; fill up the jar in this manner, and cover the shad with sharp cider vinegar. Cover the jar with a stiff paste, and bake in a slow oven for three or four hours. If the vinegar is strong it will dissolve all the small bones of the shad, and the large one should be removed before baking. This will keep, in a cool place, if tightly covered, for five or six weeks; so it is well to pot three or four shad at once. It is a delicious relish for either breakfast or tea.

POTTED BEEF.—Take eight pounds of lean rump steak, put it into a stone jar, with a tea-cup of boiling water, a level table-spoonful of salt, a teaspoonful of pepper, and a few whole allspice, with one onion chopped fine. Cover with paste and bake for three hours. Turn out all the liquor, and take out the meat into the chopping-bowl. Pound it fine with the pestle; season with half a tea-cup of catsup. Taste it, and if not highly seasoned add more salt and pepper. When perfectly fine press into moulds, or small cups; and if desired to be kept for six weeks, cover the tops with melted butter so thickly that no meat is seen. Wet the moulds or cups with water, and the beef will turn out in form.—*Scribner.*

A MOST EXCELLENT DOMESTIC CONFECTION.—This is the season for oranges. The peel of this fruit, preserved in sugar, is one of the most delightful confections which a family can use, far superior to the extracts sold in the shops. The peel should of course be perfectly clean, and should be cut in long thin strips. Stew in water till all the bitterness is extracted. Throw away the water and stew again for half an hour in a thick syrup made of a pound of sugar to one of peel, with just water enough. Put away, in a cool place, for flavoring puddings, pies, etc. For this purpose, it should be chopped very fine. No better or cheaper flavoring can be furnished to a household.

STORING ASHES IN WOODEN VESSELS.—A great many conflagrations originate from the embers of wood ashes. When a few quarts of embers are thrown into a barrel of ashes, or into a bin of wood ashes, a second combustion often occurs slowly, until many bushels have been burned over. Then, as the smouldering fire reaches the boards or the staves, the wood will soon be ignited. Insurance agents should make particular inquiry on this point; and, if the insured will persist in the practice of storing their ashes in wooden vessels, they alone should be the losers if their buildings take fire from such a cause.

CRACKER PIES.—Roll six crackers fine and put them in a four-quart pail or kettle, pour over them three-fourths of a pint of vinegar, two cups of molasses, and a quart of boiling water. Boil on the stove half an hour, adding more water, if necessary, to make quite thin. Add salt, raisins and all kinds of spice, and make short crust for four pies. Bake about twenty minutes, or until the crust is done. A little sugar may be added before the top crust is put on.

CORN BREAD.—Take four cups of sour milk, one of these partly filled with cream; one egg, a little salt, two even teaspoonfuls pulverized soda; mix the soda with a little corn meal, and stir altogether, till it foams; then add corn meal till a thin batter is obtained, and pour into hot tins, oiled, an inch deep, and bake in a quick oven.

Hints for House-Furnishing.

With the return of spring the hearts of housekeepers are turned to their houses. It is astonishing how dingy now appear articles of furniture that have hitherto quite satisfied us; how we long to renew the freshness of our rooms as the earth renews her verdure. It is easy enough to do this where there is plenty of means at command,—to do it, at least, in a certain way,—but to do it satisfactorily requires no less taste than money. Some of the ugliest rooms we have ever seen, have been those on which no expense has been spared. The compensations of a limited income may often be seen in the thoughtfulness which it compels both in dress and house-furnishing. Very few of the tradesmen concerned with the fitting up of interiors are to be wholly trusted in matters of taste. It is worth while for all, especially those with moderate means, to make these things a study; to educate the eye, as far as possible, so that they may not make mistakes of color and form which they cannot afford to repair speedily.

Philip Gilbert Hamerton, in his *Thoughts About Art*, drops many useful hints on the decoration and furnishing of houses. "A house," he says, "ought to be a work of art, just like a picture. Every bit of furniture in it should be a part of a great composition, chosen with reference to every other part. A grain of color the hundredth of an inch across, is of the utmost importance in a picture, and a little ornament on a chimney piece is of the utmost artistic importance in a house. A friend of mine, who really understands painting, is so exquisitely alive to harmony of color, that I have seen him exclude a penholder from a large room because its color was discordant. This may be carrying matters a little too far, but the principle is correct. There should, of course, be some dominant color in every room, and whatever fails to harmonize with it should be kept as much as possible in the background if it be impossible to exclude it." But the harmonies of color, according to Mr. Hamerton, are just what are least understood, and he goes on to teach us by illustrations from Nature, that blue and green, contrary to the milliner's dictum, are, or may be, in exquisite harmony when used in the decoration of our houses.—*Scribner.*

TO BAKE TONGUE.—Parboil the tongue and skin it as for roasting; trim it neatly, mince two boiled onions, a bunch of parsley; mix with these three tablespoonfuls of fine crumbs seasoned with a drachm of cayenne, and a blade of mace and six cloves pounded; spread the seasoned crumbs over the tongue, and cover them with bacon cut as thin as possible. Roll up the tongue with the thick part in the middle, put it into a small baking-pan, cover it with broth or stock, put it into the oven and let it bake slowly from three to four hours. When taken out, put it into the mould and press it till cold. It makes a pretty dish for breakfast or lunch.

OYSTER SOUP.—Take one quart of oysters and separate them from the liquor, wash them thoroughly in a pint of water, strain the liquor, add one pint of milk, some mace, nutmeg and pepper, with three crackers pounded fine, and one-fourth pound of butter, boiled all together about five minutes; take it off the fire; when about to serve up the soup, put in the oysters and let it boil one minute. The soup will then be ready for the table. For each quart of oysters a pint of milk must be added, and every other ingredient in proportion to the quantity required. Three pints of oysters are sufficient for eight persons.

MEAT BALLS.—A savory way of preparing meat, is in the form of meat balls made thus: Cold boiled or raw beef or pork chopped very fine, put into a dish, together with eggs—one to each half pound of the meat—crumbs of light bread, soaked and mashed fine, a couple of medium sized onions chopped, (may be omitted, if not liked), season to taste, with salt, if the meat is fresh, pepper, nutmeg and allspice, and form into egg-shaped balls with the hand; if too moist to form well, add a little flour, and fry in plenty of lard.

WET COAL DUST.—Coal dust burns better when moistened. The moisture helps it to coke, and if the back part of the fire is bright red, the steam being decomposed, acts as so much additional fuel, the oxygen promoting the combustion, and the hydrogen inflaming.

TOMATO CUSTARD.—This is said to be a beneficial diet for consumptives. It is made by straining finely stewed tomatoes through a course sieve, and adding two pints of milk and one pint of tomatoes, for four eggs and one teaspoonful of sugar. Bake in small cups quickly.

EXCELLENT CRACKERS.—To fourteen cups of flour, add one cup of lard, two teaspoonfuls of soda, four of cream tartar. Rub the ingredients well into flour, then add three cups of water, work thoroughly and back quick.

OMLETTE.—Six eggs, beat the whites and yolks separately until very light, then stir together; add no salt as it will make it heavy. Put on a hot griddle slightly greased with butter; when nicely browned, turn—serve hot.

MUFFINS.—Three eggs, one cup sweet milk, one small teaspoonful of soda, two of cream of tartar, a piece of butter the size of an egg, three cups of flour. Bake in muffin rings, in a quick oven.

Washing Summer Clothing.

Summer suits are nearly all made of white or buff linen, pique cambric or muslin, and the art of preserving the new appearance after washing is a matter of the greatest importance. Common washerwomen spoil everything with soda, and nothing is more frequent than to see the delicate tints of lawns and percales turned into dark blotches and muddy streaks by the ignorance and vandalism of a laundress. It is worth while for ladies to pay attention to this, and insist upon having their summer dresses washed according to the directions which they should be prepared to give their laundresses themselves. In the first place, the water should be tepid, the soap should not be allowed to touch the fabric; it should be washed and rinsed quick, turned upon the wrong side, and hung in the shade to dry, and when starched (in thin boiled, but not boiling starch) should be folded in sheets or towels, and ironed upon the wrong side, as soon as possible. But linen should be washed in water in which hay has been boiled or a quart bag of bran. This last will be found to answer for starch as well and is excellent for print dresses of all kinds, but a handful of salt is very useful also to set the colors of light cambrics and dotted lawns; and a little beef's gall will not only set, but brighten the yellow and purple tints, and has a good effect upon green.—*New York World.*

POTATO YEAST.—Pare, wash and grate four good-sized potatoes, add to them one-half teacupful of salt, two-thirds teacupful of sugar, pour over this mixture one quart of boiling water, and when luke-warm add one cup of good yeast, and let it rise. It does not keep quite as long as hop yeast in hot weather, but makes sweeter bread. If kept in a cool place it will keep two or three weeks in summer and double the time in winter.

COOKIES.—One teacupful of butter, one of thick cream, two of sugar, one coffee-cup of milk, one teaspoonful of soda, two of cream of tartar, half a nutmeg, and flour to knead soft. Bake in a quick oven.

BUTTER SPONGE CAKE.—One cup butter, two cups sugar, one and one-half cups flour, six eggs, one teaspoonful of soda. Dissolve the soda in a tablespoonful of milk; rub the cream of tartar evenly in the flour.

COCOANUT JUMBLES.—One pound of butter, three-quarters of a pound of sugar, three eggs, one pound of flour; add by degrees a grated cocoanut, so as to form a stiff dough. Bake in a quick oven.

The following short rules for the care of furniture are from an article in the *Technologist*: "Keep water away from everything porous, alcohol from varnish, and acids from marble."

LEMON CAKE.—Three cups sugar, one cup butter, one cup milk, five eggs, one teaspoonful of soda, four cups flour; peel and then grate three lemons, with very little of the rind.

Bar soap should be cut into pieces of a convenient size, and laid where it will become dry. It is well to keep it several weeks before using it, as it melts fast when it is new.

CREAM FOR COFFEE.—Beat one egg, sweeten with one spoonful of sugar, pour on to this one pint of water. Make over night for use in the morning.

GRAHAM BISCUIT.—One pint of sour milk, one large teaspoonful of soda, salt, stir very thick, and bake on a griddle. They are delicious.

HOW TO PRESERVE SOAP GREASE.—Fill a cask half full of good strong lye and drop all refuse grease therein. Stir up the mixture once a week.

The Useful and Beautiful.

There are really two ways to do a thing well. The one studies utility and economy without any regard to how it will look. The other includes both, and in addition, the doer is often influenced by taste, giving the preference ever to that way of doing a thing, which shall most directly promote the beautiful in union with the useful. Taste displays itself in the selection of the site for building, the plan and style of architecture, planting trees, making fences, laying out grounds, the color of buildings, etc. Some in these display taste; others seem to show an utter want of, or disregard of it, everything seeming to be done with reference only to the most short-sighted utility.

Attention to matters of the kind mentioned, would soon produce a favorable change in all our rural regions. Much has indeed been already done, toward the bringing about of this desirable change, but much more can be done. What we would say then is,—let every farmer study to make his home as beautiful and attractive, as his farm is useful and productive.

CHANGING THE COLORS OF FLOWERS.—The *Mirror of Science* says that a case is known of a yellow primrose which, when planted in a rich soil, had the flowers changed to a brilliant purple. It also says that charcoal adds great brilliancy to the colors of dahlias, roses and petunias; carbonate of soda reddens pink hyacinths, and phosphato of soda changes the colors of many plants.

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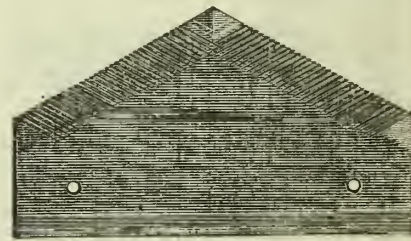
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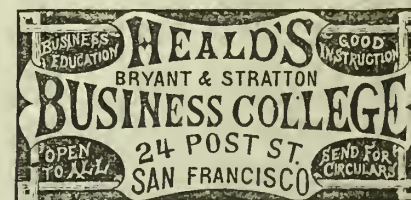
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Daily Weather Record,

BY THE U. S. ARMY SIGNAL SERVICE, FOR THE WEEK ENDING WEDNESDAY, MAY 8, 1872.

Place of Observation.	Date.	Observation taken at 9 A. M.	Height of Barometer.	Thermometer, Rel. Humidity.	Direction of Wind.	Vel. of Wind, Miles per Hour.	Amount of Rain, Inches.	Amount of Snow, Inches.	State of Weather.
San Francisco.	Thurs.	29.98	61	11	Cal.	4	Gentle		Clear
	Fri.	29.97	61	10	Cal.	4	Gentle		Clear
	Sat.	29.97	61	10	Cal.	4	Gentle		Clear
	Sun.	29.97	61	10	Cal.	4	Gentle		Clear
	Mon.	29.97	61	10	Cal.	4	Gentle		Clear
	Tu.	29.97	61	10	Cal.	4	Gentle		Clear
	Wed.	29.97	61	10	Cal.	4	Gentle		Clear
San Diego.	Thurs.	30.04	51	11	S. W.	8	Fresh		Foggy
	Fri.	30.04	51	11	S. W.	8	Fresh		Foggy
	Sat.	30.04	51	11	S. W.	8	Fresh		Foggy
	Sun.	30.04	51	11	S. W.	8	Fresh		Foggy
	Mon.	30.04	51	11	S. W.	8	Fresh		Foggy
	Tu.	30.04	51	11	S. W.	8	Fresh		Foggy
	Wed.	30.04	51	11	S. W.	8	Fresh		Foggy
Portland, Or.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Virg'a, M. T.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Corvina.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Cheyenne.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Denver.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Omaha.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair
Davenport.	Thurs.	30.03	36	55	Cal.	1	Light		Fair
	Fri.	30.03	36	55	Cal.	1	Light		Fair
	Sat.	30.03	36	55	Cal.	1	Light		Fair
	Sun.	30.03	36	55	Cal.	1	Light		Fair
	Mon.	30.03	36	55	Cal.	1	Light		Fair
	Tu.	30.03	36	55	Cal.	1	Light		Fair
	Wed.	30.03	36	55	Cal.	1	Light		Fair

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., May 9.

FLOUR—We note a good local demand with a fair inquiry for export. Sales reported embrace 10,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 5,000 Oregon extra. We quote prices as follows:

Superfine, \$5.00@5.12½; extra, in sacks, of 196 lbs. \$6.25@6.37½; Oregon brands, 5.50@6.12½.

WHEAT—The market has been firm with good demand since our last review. Sales aggregate 20,000 sacks fair to choice at \$1.75@2.05 per 100 lbs. Quotable at close at \$1.80@2.05 per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 2d. @ 12s. 8d per cental.

BARLEY—Market quiet. Sales embrace 5,000 sacks ordinary coast to choice bay, at \$1.30@1.57½, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.47½@1.70 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.70@1.85 for yellow and white per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.50 per 100 lbs.

RYE—Is quiet at \$2.10 per 100 lbs.

STRAW—Quotable at \$8.00@8.50 per ton by the cargo.

BRAN—Is selling at \$16 per ton from the mill.

MIDDLINGS—For feed, are \$22.50 per ton from the mill.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light, and prices at close are \$10.00@20.00 for fair to choice per ton. None but choice wheat will bring over \$18 per ton.

HONEY—Is selling at 15@16c in the comb and 10@12½c strained.

POTATOES—The market has not improved. Sales of new at \$2.25@2.50; old crop 50@75c.

HOPS—The range is 50@75c.

HIDES—During past week 2,180 Cal. dry sold at 18½@19, and 1,960 salted at 8½@9½c.

WOOL—The market is very quiet and prices are nominal. Receipts are large and stocks are accumulating, but sales are made with difficulty at the late ruling prices. Few dealers report sales of 147,000 lbs and 150,000 lbs, but are unwilling to give rates. Shippers and buyers have as yet affected no compromise with sellers and there is a wide difference in their views. We quote 42c. as about a fair average.

TALLOW—Market steady at 8½@9c. per lb.

SEEDS—Flax 3c; Canary, 5@7c; Alfalfa, 10@20c; Mustard, 3@6c. for the different kinds.

PROVISIONS—California Bacon 13@14½c; Oregon, 13½@14; Eastern do. 11½@12½c for clear and 14½@15 for sugar-cured Breakfast; Cal. Hams 14½@15; Eastern do. 14½@15½c; California Smoked Beef, 13½@14c. per lb.

BEANS—Market continues firm and the following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.00; Small Butter \$3.25@3.50, large \$3.75@4.00; Bayo, \$4.25; Pink and Red \$4.50.

ONIONS—Sales of a few sacks of new Red at 4c; jobbing at 5@6c. per lb.

NUTS—California Almonds, 8@10c. for hard and 15@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Hickory, 12c; Brazil, 16c; Chili Walnuts, 15c; Italian Chestnuts 25c; Eastern Chestnuts, 15@20c; French Almonds, 22@25c; Princess Almonds, 35@40c; Cocoanuts, \$6.00@8.00 per 100.

FRESH MEAT—Market shows a decline since last report. We quote slaughterer's rates as follows:

BEEF—American, 1st quality, 9@10 per lb. do. 2d quality 8@9 per lb.; do. 3d do. 5@7c.

VEAL—Quotable at 6@10c.

MUTTON—6½@7c. per lb.

LAMB—Easier at 9@10c.

PORK—Undressed grain-fed is quotable at 6½@6¾c. dressed, grain-fed, 9@9½c. per lb.

POULTRY—Live Turkeys, 23@25c. per lb.; dressed, 25 per lb.; large Hens \$9.00@10.00; Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$6.00@9.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, \$15@18 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@3.50 per dozen; Rabbits, \$1.25@1.50. English Snipe, \$2.00@2.50.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in fair supply, but considerable is being packed and receipts are lighter; it may be quoted at 20@25c, with a few choice lots at 27½; New firkin is quotable at 22@25c; old is dull at 12½@20c.

CHEESE—New California, 12½@16c; Eastern, none in market.

Eggs—California fresh, are plentiful at 32½@33c. per doz.

LARD—California 12½@13½; Oregon, none in market. Eastern in cases 14@14½c; do in tes. 11½@12c. per lb.

FRUIT.

Tah. Oranges, 100@120; Apples, eating, bx 2 25@2 75; California do. 10 00@35 00; do cooking, bx 1 00@2 00; Lime, per M. 30 00; Pineapples, 10 00@15 00; Australia Lemons, M 10 00; Strawberries, 10 00@15 00; Sicily do per M. 10 00; Gooseberries, 10 00@15 00; Cal. do per M. 10 00; Cherries, 25 00@30 00; Bananas, bunch 2 00@2 50.

DRIED FRUIT.

Apples, per lb. 7@8c; Pitted, do per lb. 22½@25; Peaches, per lb. 9@10c; Raisins, per lb. 5@6c; Black Flgs, per lb. 7@9; Apricots, per lb. 9@10; White, do 15@20; Plums, per lb. 5@10.

VEGETABLES.

Cabbage, per lb. 3½@4; Cucumbers, per doz. 1 00@1 25; Garlic, per lb. 5@6; Marf. Sph. th. 5@6; Rhubarb, per lb. 3@4; Asparagus, per lb. 4½@5; Green Peas, 3½@4; Tomatoes, 10 00@15 00; Sweet Peas, 5@6; String Beans, 15c.

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is firm for all descriptions. Burlap sacks 17½@18c; Flour sacks 10@10½c. for qrs. and 16@16½c. for hls. Standard Gunnies are nominal at 20@21c; Wool 75@80c; Hessians 40 inch goods 14@14½c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been quiet, with a very active demand for export, but trade is hindered by a scarcity of vessels. Cargo rates are very firm owing to high freights. Retail rates will advance \$2.50 per M on and after the middle of this month. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood \$16; refuse \$12; dressed do. \$30; refuse do. \$20. We quote Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$42.50@45; Cedar \$50@55. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange:

Puget Sound Pine—
Rough, per M. \$20 00
Fencing and Stepping, per M. 32 50
Fencing, second quality, per M. 25 00
Laths, per M. 3 00
Fencing, per lineal foot. 3c
Redwood—
Rough, per M. 20 00
Rough refuse, per M. 15 00
Rough Pickets, per M. 18 00
Rough Pickets, pointed, per M. 20 00
Fancy Pickets, per M. 30 00
Sliding, per M. 35 00
Sunglaid and Grooved, surfaced, per M. 25 00
Half-inch surfaced, per M. 35 00
Rustic, per M. 37 00
Batten, per lineal foot. 3c
Shingles, per M. 3 00
Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$60 per M.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manila, 19½c; Rio 19½c@20; Ground Coffee in cases 30c; Chicory, 12½c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c@5½c; Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2½ cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, \$10.50@11; in kits No. 1 \$2.50@2.75; do No. 2, \$2.00@2.25. Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

SUGAR—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Golden C. 10½@11c; Hawaiian 7½c. as extremes per lb.

SYRUP—Prices may be given as follows: 72½c in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c, and Castile, 13½@14c per lb.

TEA—We quote Young Hyson at 85c@1.15; Gunpowder, 95c@1.50; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c@1.00; English Breakfast Congou, 50@55c; Basket 60@70c. per lb.

SAN FRANCISCO METAL MARKET.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

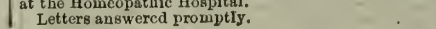
THURSDAY, May 9, 1872

IRON.

Scotch Pig Iron, per ton. \$70 00
White Pig, per ton. 82 00
Refrined Bar, best assortment, per 100. 05 00
Hance Tin Slabs, per 100. 05 00
Plate, No. 5 to 9. 05 00
Sheet, No. 10 to 13. 06 00
Sheet, No. 14 to 20. 07 00
Sheet, No. 21 to 27. 08 00
Horse Shoes, per 100. 8 00
Nail Rod. 11 00
Norway Iron. 9 00
Rolled Iron. 6 00
Other Irons for Blacksmiths, Miners, etc. 6 00

COPPER.

Sheathing, per lb





IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELER KIRBY MOWER, a late invention of three years successful test. It embraces several new features which no other two-wheeler Mower has ever yet attained, and which give it several advantages which no other machine of its kind possesses, among which are:

- 1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.
- 2d—It can be run with a STIFF OR LIMBER POLE, as desired.
- 3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.
- 4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.
- 5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.
By OMAR JEWELL, Manager. 18v3-3m

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

From ALL SIZES
3 to 30
Horse
Power. **Hoadley's**
Portable Engines
Sole Agents
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"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 cowbp

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Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins. Sweeny, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

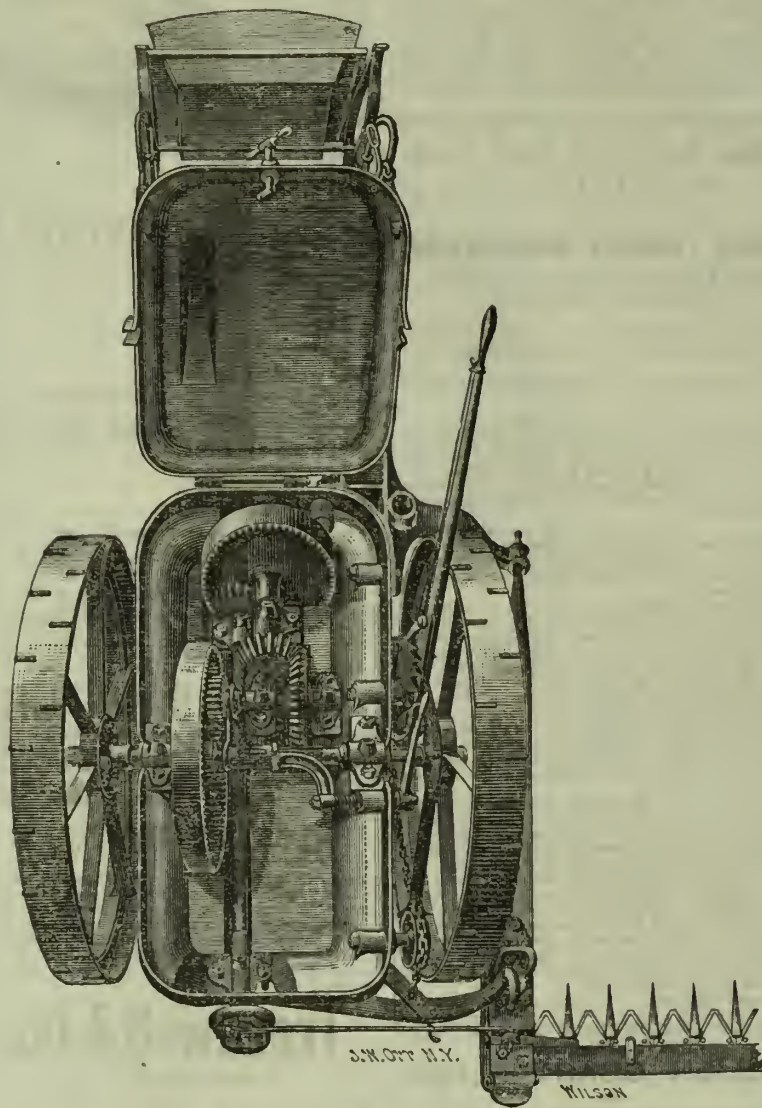
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WILLIAMS & MOORE, Proprietors,
Stockton, Cal.

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 542, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anaheim. 12v3-3m

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains. ITS GEARING IS SHAPED TO STANDARD GAUGE, and EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water, Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAFT and the same DURABILITY which pertains to CUT GEAR in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most Intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

"There is no other Harvester."

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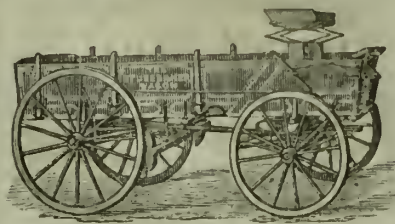
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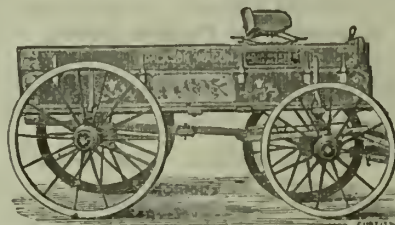
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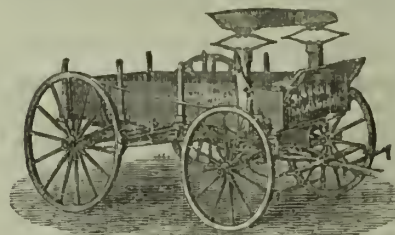
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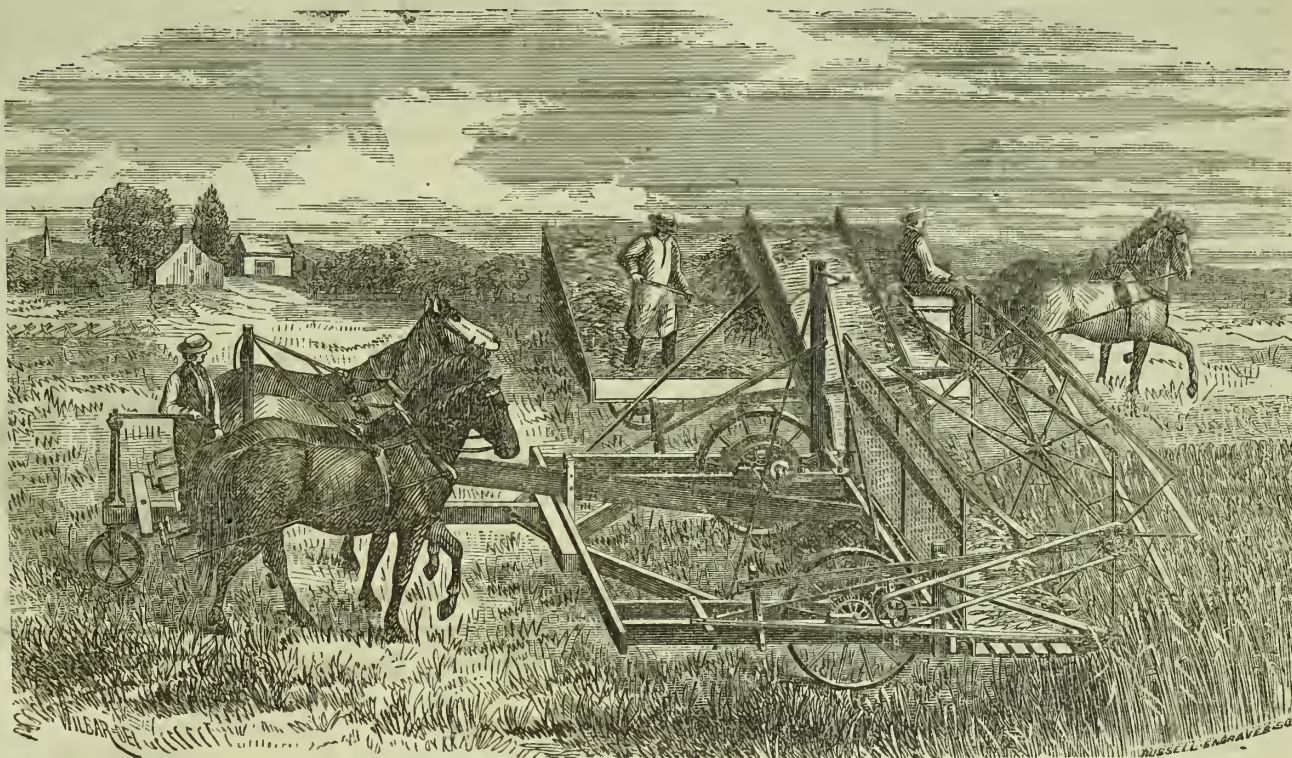
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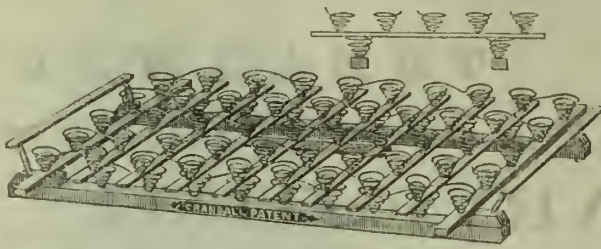
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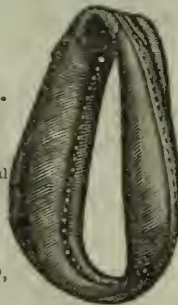
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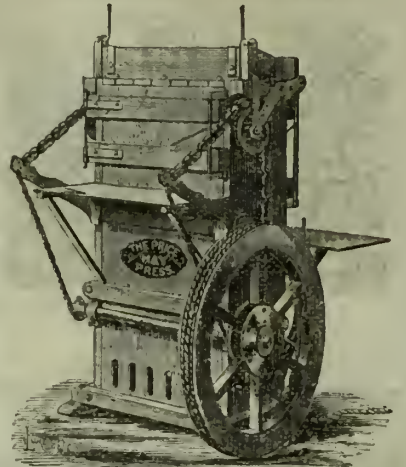


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Frequently bales over

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Their wonderful capacity is due chiefly to the fact that they are not set up on skids, with the machinery in the bottom, like every other Power Press in the United States, but the box for the reception of hay extends from the top of the Press clear down to the ground, thus giving room in a low, small Press, for a large bale.

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No. 4, nearly all bard wood.	8 ft. 8 in.	300 lbs.	3000 lbs.	17 tons.	\$500

These Machines are sold without DISCOUNT, and for CASH ONLY.

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PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, MAY 18, 1872.

[Number 20.]

Short-Horns.

For many years after the first introduction of this fine breed, it was supposed and generally conceded that short-horns were only adapted to mild temperatures, rich lands and abundant pasturage; that hill lands and thin pasturage would not answer, more than barely to keep them in tolerable condition; hence the richest and heaviest grasses and clovers in summer, and corn in the shock, or the best of hay with grain of some kind in winter was deemed a necessity, successfully to rear superior animals of this breed.

That notion has been found to be altogether a mistake. Any northern climate even, in which cattle of the ordinary breeds are or can be well protected from cold in winter, and any ordinary soil which is rich enough to yield abundant pasturage and good winter forage, has been found equally as good for them as others.

Plenty of food and that of good quality, with good winter protection any breed should have to thrive; and the short-horn needs nothing more. From Maine to Texas and from the extreme Eastern States to Cal., and Oregon, they find congenial homes and food, are prolific in their increase and make a healthy and rapid growth. We repeat that a sufficiency of herbage of good quality is all they need, and with that the question of their success and adaptation is solved.

East of the Rocky mountains, between the latitudes of 30 degs. and 45 degs. north, and even south of 30 degs., where the country can furnish sufficient forage for them, they will undoubtedly thrive equally well; whilst west of the Rocky mountains, from Lower California north to Puget Sound, their success is sure.

The short-horn is considered the best breed for milk and beef combined of all the improved breeds of England or America, or indeed of the world. They fatten easily on proper food, are extremely docile and the noblest looking of all the bovine race. Nor are they the delicate and unsprightly animal that many unacquainted with them suppose them to be. The ox of this breed is large, strong and a good traveler upon good roads, but owing to their great weight are not as well calculated to gain a subsistence upon thin, high mountain pasturage as the lighter and more agile Devon.

The splendid bull of which we present an engraving is the property of C. C. and R. H. Parks, of the Glen Flora Stock-Breeding Farm, Waukegan, Ill. It is an imported bull, color rich roan; calved May 2, 1868, and bred by Mr. Torr, Aylesby Manor, Lincolnshire, England. It is undoubtedly one of the finest of its breed on the continent; as none but the best of any breed or race of animals ever find a place upon the farm of these everywhere celebrated stock growers.

Whiskey from Tule.

The pith or spongy, central part of the Tule, is found by analysis to contain gluten and starch in large quantities, whilst the green outer covering abounds in albumen. These substances all possess the constituents of alcohol, and are easily convertible into that material by the requisite means and process.

The ripened, but not dried tule, after being minutely divided by suitable machinery, is subjected to boiling in dilute sulphuric acid, which converts the starch and other sugar-producing constituents, into glucose or uncrystallizable sugar—molasses—which being diluted with water to the proper degree, a ferment is added which brings out or produces the spirit by the com-

Wool Prospect.

There seems hardly a possibility that wool will maintain even its present value. There are now in store, in San Francisco, over 18,000 bales, including all grades, and every day is adding its quota of receipts from all parts of the State. If we compare the present amount on hand, with the wool clip of last year, it is evident that a very large quantity is still in the hands of the growers, for some of which prices ranging from 40 to 52 cents have already been paid. The receipts of this, in addition to that now on hand, lessened only by a few light sales, will have a tendency rather to lower the price in this market than lift it to a higher figure.

Much of that now coming in is not sold or

Beet Sugar in Sweden.

In the monthly report of the Department of Agriculture for March and April, just received, we find a lengthy communication on the manufacture of beet sugar in Sweden, from C. C. Andrews of the United States Legation at Stockholm, to Hon. Hamilton Fish, Sec. of State. It appears that in that high northern latitude beet sugar making is a complete success. On application to Mr. J. Franchell, one of the principal proprietors of the oldest beet-sugar factories in Sweden, that at Landskrona, the following facts were elicited—we present them greatly abridged—that the land used—2,000 acres—is a sandy loam; that the whole of the land has been drained with pipes laid at a depth of 4 to 4½ feet, and cultivated to the depth of 16 to 18 inches.

That from 15 to 17 tons per acre is considered an average crop; and the profit of growing beets over their cost, is from \$45 to \$55 per acre. As a winter protection for beets, till wanted at the factory, they are placed in pits or trenches and covered with two feet of earth. Their season of working is from October to February.

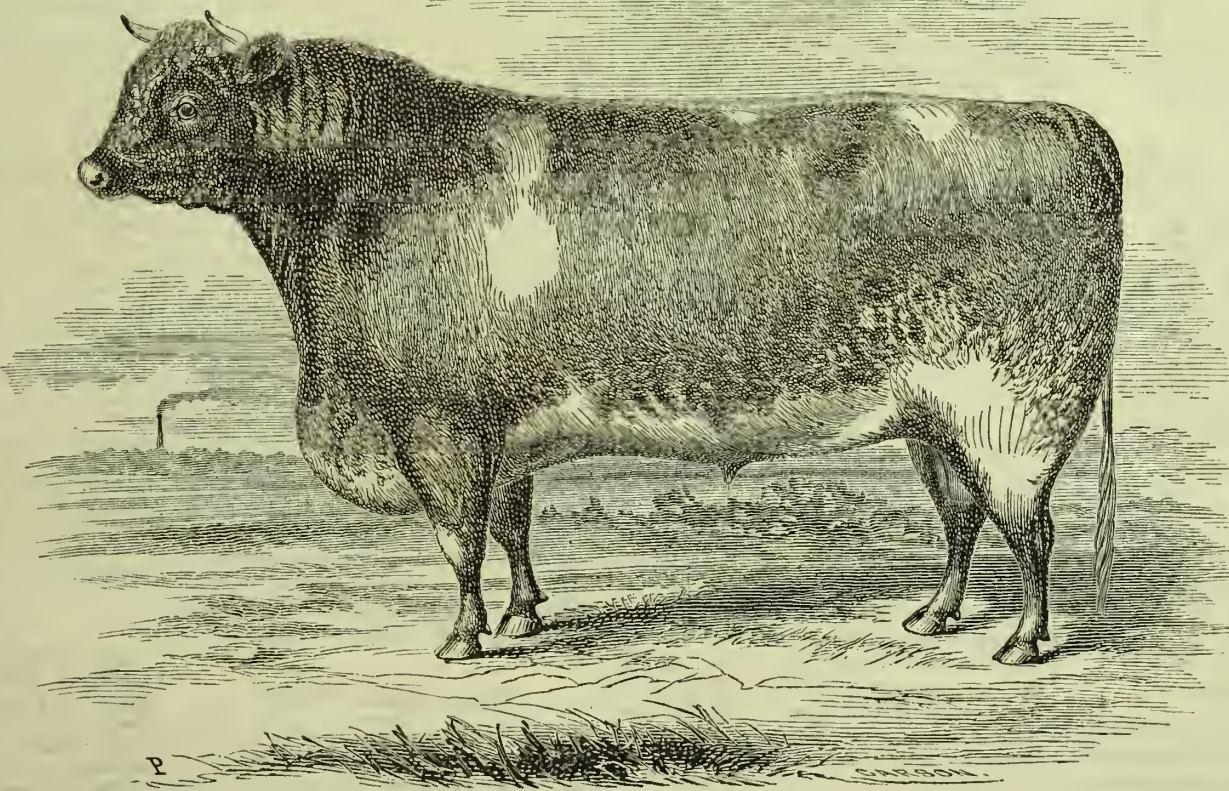
That they deteriorate rapidly in February and March. They plant their seed even in their northern latitude, in the last half of April and early part of May. The crop is not ripe before October, during which month, the whole crop is gathered.

Mr. Franchell says:—"I am not aware of any important improvements in the art of manufacturing during the last two years, but I believe that several minor improvements have been introduced in the manner of working the new system of extracting the juice by diffusion, a system which, during the last few years, has excited a great deal of attention on the part of the manufacturers of beet sugar, and appears on the whole to give great satisfaction."

"There is at present a very active movement with regard to the beet sugar business. There are now at work one factory in Stockholm, one near Mahno, and one at Halmstad; and two in course of construction, one at Wadstene and one near Ystad."

It would appear from this, that beets can be grown successfully for sugar making, even in high northern latitudes, and we expect soon to see Oregon waking up to the importance of beet-sugar making, for the supply of the great northwest.

COTTON GROWING.—We are informed that T. J. E. Wilcox in company with several other gentlemen are planting one hundred acres of cotton, on Mariposa Creek, Merced Co. Mr. W. has had several years experience in cotton culture before coming to California. We shall hope to hear favorable results from the new enterprise.



SHORT-HORN—GENERAL NAPIER.

mon process of fermentation; the mash is then distilled in the ordinary way producing tule whiskey.

New Varieties of Fruits.

There is a feature connected with the climate of California, that renders the production of new varieties of fruits quite easy in comparison with many other countries; it is found in the propensity of fruit bearing trees to produce fruit at a very early stage of their growth, of a thousand seedlings grafted upon trees three or four years old, a large majority of them would determine the general properties of the new fruit as soon as the second, or third year at furthest.

So that ours is a position peculiarly favorable to the early determining of new varieties; and we hope that connoisseurs will institute experiments upon this exceedingly interesting branch of pomological science.

An all-wise Being created flowers. Not to notice them, shows a corrupted taste, and a total want of grateful sensibility.

contracted for, and for the most part is in small lots, from the growers on a small scale, many of whom feel compelled to realize, even at low rates; this will have a further tendency to lower prices; and we now hear of sales of small lots at prices ranging from 36 to 40 cents. On the whole, we do not see what there is to warrant a belief that wool is to advance in price greatly beyond its present market value.

NUMEROUS trials have abundantly proved that cooked food is the most economical. It digests much more easily than raw, yields more nourishment, and is better relished by most animals. Many who have tried this method claim to have made from one-third to one-half saving in grain and a gain of as much more in time.

A GENTLEMAN, in the vicinity of Terre Haute, Indiana, reports seven hundred and forty dollars net profit from one acre of grapes, last season.

A PREMIUM sweet potato in Louisiana weighed sixteen pounds, and measured, in circumference, twenty-four inches.

CORRESPONDENCE.

Clean Farming.

EDITORS RURAL PRESS:—Clean farming is undoubtedly as great a desideratum as clean housekeeping, and though women generally get the most censure for being untidy, I believe there is less excuse for an untidy farmer than for a dirty housewife. A farmer's wife, in nearly every case, has to do all the housework, and three meals a day, alas, have to come "no-leus volens," whereas, her lord has a chance to shirk a little, and can seem to be very busy when he is really doing nothing. It would seem, from the appearance of some farms, that clean farming had become one of the

Lost Arts,

And that chaos, instead of order, reigned supreme; and though the wife may sweep the yard and keep things "kinder straight," yet the terrible confusion in which the farm tools are scattered over the place, and the piles of broken rails, lumber, wood and brush lying around loose, indicate plainly the absence of regular habits in the boss; which he doubtless excuses on the score of too much to do. Now, a press of work is no excuse for

Irregular Habits,

And the farmer who, after finishing a piece of plowing, leaves his plow in the last furrow, when he could just as well have brought the plow to the house, along with the horses, and housed it as well as them, is no better than he should be.

Is it not just as easy to put tools away on the completion of a job as it is to leave them in the field, and have to go may be half a mile out of the way to bring them, or starting into a new task in another place? Would it not be far better to bring portable tools up every night and hang them in their proper places, than if circumstances changed the farm programme, to have the next morning to send for them to a distant portion of the field? At any rate, on Saturday nights the tools should all be put away, that the farm as well as the family might on the Sabbath present a holiday appearance. It is true that farmer's without system often make money, but that is no proof that

With System

They would not make more. That farming is an art, is an acknowledgement which the sooner it is won from farmers the sooner will they begin to realize that the application of systematic brain-work to farming is the only solution to the problem of whether farming will pay.

Careless administration has brought many powerful governments to bite the dust, and careless farming is the cause of so many families eking out a miserable existence on the farm, and the complaints of bad crops, low prices, and the general anathemas hurled against farming as an avocation, all spring from the lack of discipline and general negligence in which untidy farmers carry on their husbandry. Who ever visited a farmer whose farm presented an

Orderly Appearance,

And was prompted to ask, "Does this farm pay?" That would be the last question; but, on the other hand, where everything betokens a negligent hand at the head of affairs, would not the visitor leave with the decided impression that this man was behind the times, and that instead of his running the farm, that it was running him—in debt.

A. U.
Madronia Farm, Yountville, May 2, 1872.

About Potatoes.

EDITORS PRESS:—At the present time there seems to be much enquiry as to which is the best potato. But few people have any idea of the number of good varieties; let us just glance over the lists. Lady's Finger and Kidneys for baking, Early Rose, Goodrich, Climax, Peerless, Excelsior, Brezce Prolific, Pink Eyes, Peach Blows, Jackson Whites and Chenango; now, these are all of them good. As to the Excelsior, I speak of their quality as a table potato, having tried them, both baked and boiled, and they stand A No. one. Those I am eating have been dug over six months, and they are in prime order now. Some 3,000 pounds of that seed will be planted here this season. The Climax is a very great producer and table potato; the Early Rose and Goodrich have been in the market for two seasons, and their merits are well known. A great deal of effort has been made by one or two parties here to introduce into the market new varieties every year, and that, too, at considerable expense.

Culture of the Potato.

This is one of the most mixed questions that a person has to work up; nearly every individual has his own particular way of planting. During an experience of forty years upon a farm, I have never found two persons that can agree upon the same mode of planting. I believe that 2 or perhaps 3 eyes, are sufficient. If planted in drills, the rows should be at the

least 30 inches or three feet apart, and the seed should be twelve or fifteen inches apart in the row. There seems to be a great desire to crowd the seed.

Choice of Seed.

There seems to be a great lack of judgment on the part of some farmers in this respect. I have seen farmers cull their potatoes twice or thrice, for eating, and then what are left are put into the ground as seeds for the coming crop; never was a greater error committed; the best are none too good. We sow the best grain; why not plant the best potatoes? I hold that it is poor practice to sell the best and keep back the poor for seed; in time a farmer will find that he is losing ground, and his stock of grains and vegetables depreciating. D. L. PERKINS.
Emmation, May 7th.

Five Years on a Farm.

EDITORS RURAL:—I would like to stir up the "lords of creation (?) a little, by stating how we country wives are sometimes badly taken in; and instead of what was promised us, we have, after a lapse of four or five years, only a dreary, comfortless, country home.

I find that nature, year by year, does all she promised; with returning spring-time, we have all the balmy and delicious morning air, we hear the song of birds, and look upon the sheen and beauty of whole fields of wild flowers; but they are in the fields and on the hillsides—not in the lawn, the flower garden, or even the front door-yard of the farmer's home, for there is no door-yard there.

I expected, indeed I knew, that my home on the farm for the first one or two years would be uninviting, but I did not expect it was to be so always. Five years have passed, and no front door-yard is yet inclosed, not an ornamental plant or tree has yet been planted out; no walk bordered with flowers; no vine or creeper decorates the porch or climbs the trellised front—for there is no trellis there.

No light and cheerful fence has yet taken the place of the rough and heavy rail or the gate of coarse old boards. The swine from the barn-yard have free range around the house, and make their toilet against the posts or projecting corners of the rough old fence, and hens wallow in their dust-holes around the front door. Is it any wonder that I begin to wish I had never been a farmer's wife?

Oh, ye men who are ever looking after the dollars, and ever thoughtless and neglectful to make your homes attractive, don't be surprised if on some night when you return late from the city with your pockets full of the proceeds of your grain or stock sales, you find your wives' prison house vacant of its tenant. And now, I give fair warning, that if I don't have a nice picket fence around the 40-foot square plat of ground between our house and that ugly old rail fence in front, before next November, so that I can beautify it with trees, and shrubs, and flowers, with my own hands, and with money that I have made raising chickens—it being the only live stock I have raised—I can be seen with my bonnet on, and carpet-bag in hand at the first opportunity, sitting on that hateful old front fence, waiting for some fellow to come along and run away with me; and I shan't tell him not to, either.

A. M.
Russian River Valley, May 13, 1872.

That very many of our farmers are sadly negligent in rendering their home surroundings attractive, even where it can be done at very little cost, is too apparent in very many of our farming districts and particularly those remote from cities and villages; but still we hope our fair correspondent won't do anything rash. Better consult H. Greeley in his "what I know about farming"—and there learn, that "to be happy on a farm, you must raise something besides chickens."

Walnut Creek.

EDS. PRESS:—Enclosed find proceedings of the Contra Costa Farmers' Club. We are not fully organized yet, not having adopted a Constitution, but will at next meeting. We have the material here for a very good organization, and our farmers are waking up to the importance of working a little more for themselves and less for the middle-men. When men in San Francisco are not content with getting ten or fifteen per cent. commission on the grain, but must still further pile on the agony by getting possession of all the sacks and placing an exorbitant price on them, they drive the wedge a little to far, and will compel farmers to organize against them. We hope soon to have subordinate Clubs organized throughout the County; and then when we want sacks or farm machinery we can send East for them, and be independent of all "rings." A farmer of this vicinity sent East for a wagon, a short time since, and had it lauded in Oakland at a total cost of \$100. And so it will be with reapers and mowers; we can ship them out cheaper than we can buy them in San Francisco at present rates—they have advanced twenty-five per cent., within a few months. A more liberal policy on the part of sack and grain men in

San Francisco would result in a better feeling among the farmers, toward that city, in regard to her Goat Island fight.

As it is, farmers regard it in the same light the old lady did the bear, fighting her husband. I think, Mr. Editor, your efforts in behalf of a liberal policy toward farmers would be appreciated. Crops are looking well. There is considerable chess in the early sown grain, and some of it will have to be cut for hay. The grain sown in February and March looks well, and with a little more rain will turn out good.

RAMON.

Prolific Barley.

EDITORS RURAL:—Mr. T. W. Merrill of San Diego, has a stool of barley that grew this season on his lot in this city, that contains three hundred and eighty-two stalks from one kernel of barley, he observed it when it first came up, one spear which grew very rank, and soon stooling, adding stalk after stalk until it contained the number mentioned above. If you would like to have this stool of barley to exhibit in your office, I will send it to you if you will pay the express charges on it. A. M. C.
San Diego, May 4th, 1872.

We were about to say, send it right along; but on a moment's reflection would suggest, that this remarkable stool of barley be permitted to fully mature its seed; and for these reasons—it has been by selecting specimens of remarkable or unusual growths among grains and vegetables, and giving them careful culture, that agriculturists in all ages, have originated from time to time, new and valuable varieties. It may be so in this instance; possibly an unusually prolific variety may be the result, or it may be only the product of a single grain standing quite alone, in very rich soil admirably adapted to its growth.

There may possibly be another cause for this apparently remarkable production. We were once a member of an agricultural society that offered a premium of five dollars for the stool of wheat containing the largest number of stalks, with perfectly matured heads of wheat; the stool of wheat to be taken from the wheat-field, and as the offer was not made till two months before maturity there was no opportunity to grow them purposely to meet the ease.

There were over fifty stools presented for premiums, with from twenty to eighty-five stalks each; whilst one alone carried the very large number of 176 stalks. It was claimed by those presenting the lesser numbers, that the one with the 176 stalks was a union of two or more stools so closely interwoven, that their apparent union could not be detected, and it was proposed that they should all be hung up to admit of the roots becoming perfectly dry, the better to determine in regard to a possible union of two or more stools.

The result was, that when the large stool was taken down from the nail on which it had hung, and by the exhibitor himself, and slightly shaken, it fell apart into three distinct stools. If three or four seeds are planted close together they will sometimes grow and present an apparent, perfect union, when in fact they are not. It may possibly be the case with our San Diego 382-stalked stool of wheat; we would therefore propose that it be allowed to mature and then we would be pleased to hear the result.

Plano, Tulare County.

Speaking of the county generally, I think we are not having a very favorable season, for though there was plenty of rain early, and it came in such shape as to produce the most good, yet the spring rains have been almost a failure, so that crops that were not put in the dust, or early, have not a chance to amount to much; then the unexpected and severe late frost, that came on the mornings of the 11th and 17th of April, hurt grain in low places, besides cutting down nearly all the potatoes and other tender vegetables, destroying the young growth of the vine, also thinning out peaches, apricots, etc. Much of the grain will be cut for hay; we hope to see the vines shoot out again and produce a crop; and as the peach trees usually have far too much fruit upon them, we expect there will be plenty.

The Advantages of the Plains

Are shown this spring more plainly than ever, for here the frost hardly touched, only toppling a few potatoes in low places; and now our earliest ones are ripening, whilst others are in full bloom and vigor. Tomatoes on the vines are over an inch in diameter; China Red Eye snap beans two inches long; late Eugenea peas fit for market; cabbage growing and heading finely; by the aid of a water lifter which furnishes a supply from a well eighty-five feet deep, at perhaps little, if any, more expensive than a ditch, and not liable to fail when the river dries up as it did last year.

I have just been looking at some of the vines

near Visalia, and find some, even six or eight years old, so badly cut that there is little prospect of much fruit, unless they regain vigor to make a late crop from dormant eyes. Peaches there seem mostly destroyed, and mulberry trees killed. At one nursery along Tule river bottom, two year old vines are killed to the ground; but Mr. Gibbou's peach orchard and vines that are on the plain land are not hurt, but some on land that was once overlowed are cut.

Vines out here that were cut to the ground by grasshoppers last year, have made a growth of from one to three feet. It would pay for capital to form a company and plant one or more hundred acres of vineyard of Alexander here to supply San Francisco early, and make raisins, as a large vineyard could be easily protected from grasshoppers should the pest come again. The women of one family succeeded in defending a peach orchard and some vines, during the last two visitations; but we believe the railroad, that will be here in two or three months, with its settlers, will prevent such trouble, as it has in other counties. Barley with 25 pounds seed per acre, which was drilled in the dust, is ripening and promises a fair yield; if the land had been plowed no doubt it would have been better.

ISAAC. B. RUMFORD.

The Mare for a Farmer.

Every farmer who breeds a horse for his own use or market, should at the outset possess himself of a highly formed powerfully built, well-bred mare, standing at least 15 hands high, and weighing no less than 1,200 pounds in ordinary condition. This mare he should breed to a thoroughbred horse of pure pedigree, good form, great strength and depth in body, standing on short powerful and strong limbs. He should at least be 16 hands high, and weigh not less than 1,200 pounds. From the union of these we may expect a fine animal. The mare must at least be reasonably well bred, and ought to be larger, if anything, than the horse. Never breed to a small or delicate thoroughbred. If you sow weeds you cannot expect to reap wheat. It may be asked why the same result could not be attained by breeding your fine mare to one of the many breeds of draft horses. It may suffice to say that experience shows that it cannot, but this experience rests on reason. The thoroughbred mare and the draft horse are of the same genus, but they are of entirely different origin. In form, physical constitution, they are widely different. The thoroughbred is the highest and most perfect type of the horse, while the draft horse is the lowest. In physical composition and form, they differ as widely as the Caucasian from the Ethiopian. If breed a superior race to an inferior, the produce will not be similar to either. It will degrade the superior and elevate the inferior. Hence it is a mongrel grade. If you breed an inferior race with a lower grade than the superior, the product will be inferior to both, because the tendency of all animals is to revert to the origin that most strongly predominates in them. Therefore, if you breed quarter or eighth bred mare to a coarse Norman, Percheron, Clydesdale, Punch or Lincolnshire stallion, the product must be the inferior of both, because you are not elevating the standard but degrading it.—*Ex.*

Tame Codfish.

Mr. Buckland, in a recent number of *Land and Water*, gives an interesting account of a visit paid by him to a pond containing tame codfish at Port Logan, Wigtownshire. The property in question belongs to a gentleman by the name of McDougall, and consists of an amphitheatre about one hundred feet in diameter, hollowed out of the solid rock by the sea. All egress from this is prevented by a barrier of loose stones, through which the water passes freely. On approaching the shore of the pond many codfish of great size were seen; and when a servant woman who had charge of the fish approached with some muscels, the surface of the water was perfectly alive with the struggling fish. They came close to the edge, and after a little while permitted Mr. Buckland to scratch them on the back, and play with them in various ways. Among other experiments tried by him was that of holding a muscel in his hand, and allowing the fish to swallow his hand in the effort to obtain the muscel. These fish furnish to the proprietor an ample supply of excellent food, the flavor being considered much superior to that of the cod taken in the open sea. Whenever needed for the table, a selection can readily be made from the most promising of those at hand, and the fish secured without difficulty.

THE Illinois Industrial University has 339 students, of whom 44 are young women.

MECHANICAL PROGRESS.

Russia Sheet Iron.

Mr. Rodgers of Apollo, Pa., has devised the following method of producing what is known as Russia sheet-iron. It is claimed that the process accomplishes more than any other ever devised:—

The iron, being of proper gauge, is covered on the surface of each sheet with particles of charcoal of about the size of a grain of wheat, taking care to have these particles evenly spread over the entire sheet, completely covering the surface with them. There is then laid another sheet of iron upon this first sheet, and, in like manner, its upper surface covered with like particles of charcoal. The operator thus continues to place sheet upon sheet, covering the upper surface of each until it is formed a pack of about forty sheets. The edges are then clamped in the usual manner for forming packs of sheet iron, and the pack then placed in the heating furnace, with the under sheet of the pack resting upon a bottom plate. There is then placed around the edges of the pack wood which has been thoroughly soaked and saturated with water, forming a protecting wall of wood. The mouth of the furnace is then closed so as to prevent the admission of air into it. The fire is then started in the fire-chamber, using wood as the fuel. After the fire has become completely ignited, the damper is lowered so as to retain the heat, smoke, and gases of the fire in the furnace. After the iron has been subjected to the action of the heat, smoke, and gases of the furnace until each sheet in the pack has become red, which will require about two hours, the pack is removed from the furnace and subjected to the action of a "steam hammer," or other concussive or impinging force, for the purpose of working the oxyd which has been formed on the surfaces of the sheets into the body of each sheet. The pack is then unpacked and repacked in the same manner as in forming the first pack, taking care to bring the center sheets of the pack to the outside of the pack, and the outside sheets to the inside, thus interchanging consecutively the center sheets. The pack is again subjected to heat in the heating furnace in the same manner as in the first pack. It is then removed from the furnace, and again subjected to a hammering or other force, as in the first instance. This packing, heating and hammering process is repeated four or five times, which will, as a general rule, sufficiently work into the iron the oxyd formed on the surfaces of the sheets at each heating of the pack, and give it the necessary finish and polish. The sheets are then trimmed by the shearing process, and passed through the length of the oven will be sufficient to anneal and properly color them. The sheets are now finished and are in a merchantable condition.

The Hammer vs. the Rolls.

Quite a discussion is going on between some gentlemen connected with the American Institute of Mining Engineers, in regard to the relative excellence of hammered and rolled ingots for steel rails. As rail-blooms must be reheated before the rail can be completed, the manner of forming the best bloom becomes the question of importance. One party claims that the hammer will expel more cinder and other impurities which may be in the puddle-ball or ingot, and make a more dense and tough steel, especially because the mass can be upheaved and compacted by heavy blows upon all sides, whereas the rolls, with less power, simply stretch the bloom and form it. The other party contends that when a heavy squeezer is used a better effect is had upon the puddle-ball or pile than can be induced by the hammer, and that the roll then completes the work more rapidly and better, because, in stretching the mass, it causes the metal to be pressed forward and revolve upon itself as well as to be made dense, and hence no better result could be obtained. So far as the squeezer is concerned it cannot apply to the ingot, as it is not so used, and the probabilities are that the roll has not been more generally used because there have been but few large enough. Since the Bessemer process has furnished means for producing large ingots the use of the hammer is no longer a necessity, although it is preferred in some cases. With all that has been elicited upon the subject, it seems that the preference given to the hammer arises mainly from the fact that tool-steel has up to this time been made by the use of it.

A TORPEDO boat is to be built at Boston, 170 feet long, 35 feet wide and 15 feet deep, drawing about 12 feet of water. It will be of 350 tons burden, with two propelling engines and two propeller screws. The plow is to be made sharp and will carry a steel ram six feet under water. Above the ram there will be aperture, through which will pass a long composition spar carrying a torpedo at the end. The sides will be plated with six-inch iron, and the deck with one-inch steel armor. The estimated cost is about \$300,000, to which may be added about 50 per cent. for extras and items not counted in the estimates.

A NEW canal has been projected for connecting the Rhine and the Weser. It is to be about eight and a half feet deep, forty-four feet wide, and over one hundred miles in length. The cost is estimated at about \$7,500,000.

Glass-Lined Water Pipe.

A company has been organized in New York, for the purpose of lining pipe and tubing of iron, or any other firm metal with tubes of glass. The glass tubes are made a fraction of an inch smaller in diameter than the metal tubes, and the space between is filled with plaster-of-Paris. The plaster is mixed to the consistency of cream and poured in, after which it soon becomes a firm lining, or wall between the glass and the iron or other metals, and being a non-conductor of heat and cold is not liable to freeze or be otherwise injuriously effected by the changes in the temperature of its surroundings.

That a pipe which will convey pure water to our stomachs and systems, is a most desirable thing, there can be no doubt; and that glass will do this is certain; while the fact that lead will not, is equally sure; and yet one must remember that iron will bend, and glass tubing is brittle and will break on the least deviation from the straight line, and when plaster and particles of glass and oxide of iron come in contact with each other, what the result will be, remains to be seen, when such breakages occur, as they must in the course of handling the tubes as roughly as baggage smashers are in the habit of handling.

There is no better field for the exercise of ingenuity than the one left open by this pipe business. The parties who propose the glass lining, have selected an admirable substance for the purpose in every respect but the most important one. It is not flexible, and consequently cannot be depended upon, and in fact any practical mind would condemn it at once except for use in cases where it would be absolutely free from liability to accident or external influences.

The plaster filling, or insulation, supplies, in principle, the best of protection to the glass tube and its contents against atmospheric influences, but in practice it is subject to the same objections which are patent to the glass, in the want of flexibility, except in cases where it is not subject to disturbance.

The material which is coming to the front for the lining of pipes is rubber, vulcanized to a degree which gives it body without destroying its flexibility. But a process has not yet been discovered by which this material can be well applied to the interior of tubing.—*American Manufacturer.*

STEAM CANAL TOWAGE.—The *Manufacturer and Builder* calls attention to the fact that nearly all, if not quite all, the experimenters upon the steam canal towage problem, have overlooked an important fact developed years ago on the western rivers, that towing can be done with far less power by attaching the freighted barges or flats ahead of the towboat than to the rear of it. In the case of river work the fact was developed by reason of the damage contributed to craft, low down in the water, by the swell made by the tow-boat. When the freighted boats are pushed ahead of the tow, far less resistance is offered by the water than when they have to be drawn through a swell.

BOILER INCrustATION.—This is a subject as yet very imperfectly understood, but about which there is much empiricism. The *Railroad Gazette*, after discussing the matter at considerable length in several of its late issues, "gives it up" as follows: "Of incrustations, we in common with some hundreds of thousands of other people want information. We confess we know very little about the subject, and certainly are not aware of any sovereign remedy for the evil. We are quite sure, however, that a great deal of matter gets into boilers which should not, and does great injury there; and the man who can tell how to exclude foreign substances may be sure of having very attentive listeners."

NAVAL SHIPS OF WAR.—The English propose building a ship of war with armor plating on the bottom, leaving the top sides unprotected, and, to compensate for this disposition of weight, the coals, stores and cables are to be above the water-line. The vessel is to be armed with submarine rocket tubes for the projection of rockets possessing the inherent property of preserving a given depth of immersion, and which will explode a charge of gun-powder or other explosive on coming into contact with any solid substance, such as a ship. Authority for the above statement is the *Mech. Mag.*

MELTING STEEL.—By experiments recently made with a small furnace of Sweet's patent make, it was found that steel could be melted in two hours, with raw semi-bituminous coal-mino slack, or the fine coal as it comes from the mine, putting the steel into the pots cold, and allowing one pound of coal for one of steel. Encouraged by these and other tests, the Sweet Manufacturing Company, of Syracuse, are at work putting in a 16-pot furnace, and will begin the business of melting steel about April 1st.—*American Manufacturer.*

A NEW SAFETY SIGNAL invented by Mr. George B. Cummings, is to be tried on the Boston and Maine Railroad. A dial, with figures from one to ten, nine inches in length, is set in motion by a rod being struck by a passing engine, and continues in motion ten minutes, and showing a red signal to an approaching train. The illuminated dial can be seen a great distance, and when wound up will run for ninety trains. It is designed for curves, tunnels and other dangerous places.

SCIENTIFIC PROGRESS.

The Marvels of Nature.

In attempting to write of the marvels of nature in this age of scientific development, one scarcely knows at what point, or with what element, to commence; for within the last half century, every element, as well as everything we use—our food, clothing, dwellings, modes of travel, and weapons of war as well as implements of peace, have all come within the reach of science, much to our advantage. The application of chemistry to food, agriculture, and sanitary reforms, has lengthened the life of the present generation at least five years longer than its predecessor, while the application of steam to manufactures, land and water travel, and electricity to commercial purposes, enables us of this age to conduct as much business in one year as our grandfathers could in ten. It is an undeniable truth that no race of men ever existed who have seen so many of the marvels of science, or who knew so much of nature, as this generation. Yet, withal, the very element by which all nature is seen, the very source of beauty—Light—is as great a mystery to us as it was when "God said let there be light, and there was light."

None of the elements by which we are surrounded appear to the uneducated eye so simple as light. It is less material than air, it is infinitely less so than water, which serves our purposes as ice or vapor. Science has not yet been able to discover what light is. We don't know what light is any more than we know what the electric fluid consists of, if the subtle agent that conveys our messages across the continent really is a fluid.

Electricity gives us a pleasing titillation, or a smart shock, or strikes us dead; coats the baser metals with glittering gold or silver; generates a motive power to work ponderous machinery; make a light of intense brilliancy, and performs a thousand services for us without our knowing exactly what it is. Light is infinitely more necessary to our comfort and happiness, serves even more important purposes; but we know no more of the nature of the one than we do of the other.

Without knowing thoroughly its nature, science has demonstrated that the simplest ray of light consists of many colored parts. Newton first split the solar rays into seven distinctly colored parts by means of the prism—although the rainbow has done the same thing since the dawn of the world's creation. Since the discovery made by Newton, botanists, chemists and photographers have derived great benefits by a knowledge of the various properties of the several rays of light. The generative ray, the heat ray, and the actinic ray, differ greatly in their effects in nature's great laboratory. Late investigations have proven that the actinic ray is more powerful in the new world than in the old. This will account for the superiority of American sun-pictures, particularly of those taken on this coast.

The boundaries of our knowledge of light, though quite circumscribed comparatively, have been much enlarged during the last twenty years by the discovery of its polarization, which, in a manner, enables us to analyze it—to concentrate its peculiar parts for our use. We know of no greater marvel than the examination of objects with polarized light, under the microscope. It renders visible minute details of structure in the most beautiful colors, and enables the student of nature to ascertain the difference of density or elasticity of substances, such as no other means could detect. It not only exposes frauds and adulterations in substances we purchase, but by its peculiar power shows us the causes of disease and death existing in what, by the uninitiated, are considered elements of health.

This is a very general misconception as to the power or principle to which certain phenomena, the result of exposure to sunshine, are to be referred. In general, light is regarded as the principle in such action; whereas, most frequently it has nothing whatever to do with it. The solar rays, which are commonly spoken of as light, contain, in addition to their luminous power, calorific and chemical powers, and there is good reason to believe, electric power also. All these powers are employed in the arts separately. The beautiful art of photography owes its origin to the discovery of the chemical or actinic property in the sun's rays.

One of the most remarkable proofs of the chemical nature of the sun rays is found in the action of chlorine. This element, which has worked quite a revolution in the process for bleaching linen and cotton fabrics, because of its power of removing vegetable colors, is quite powerless when out of the reach of the assistance of the sun. Flowers, cotton and linens may be kept for years in vessels containing chlorine, if kept in the dark, without losing their color. The same results follow with oxygen, sulphurous acid, carbonic acid, hydrogen and other bleaching agents, which are all powerless in the dark, while sunlight alone does not affect the colors of those substances. Another singular fact in the same connection is, that colored solutions made from mineral or vegetable substances, are much brighter when made in bright sunshine, than when made during the evening or night.—*The Miner.*

A VALUABLE COAL BED.—Report says that the coal bed, near Evanston, Utah, is from 22 to 32 feet in thickness, and constitutes one of the largest and best coal mines in the West.

THE REPRODUCTION OF EELS.—Among the prizes offered by the Belgium Academy of Science for the year 1873-74 we find one mentioned for a dissertation on the reproduction of eels. It may seem somewhat singular in this era of scientific research that we are not yet acquainted with the true method in which the spawning and reproduction of the eel is accomplished. The present hypothesis is that the young are hatched in salt water, and make their way up the rivers as far as they can go for the purpose of spending their period of immaturity, returning, after the expiration of a year or more, to the salt water to lay their eggs, and never again quitting the sea. This movement is the reverse of that which occurs in the case of the salmon and shad, these ascending to the fresh water to deposit their spawn and then going down to the sea. The assertion is not unfrequently made that eels are viviparous, and that the young can be seen at times in the oviducts of the parent. This is a misapprehension, due to the fact that this species is frequently very much infested with intestinal worms like *ascarides*, which occur in great number, and appear on dissection like embryonic fish. We can only hope that the prize offered by the Belgian Academy may be successful in securing a memoir that shall solve what may now truly be called the "opprobrium" of modern naturalists.

THE PHOSPHATE SEWAGE PROCESS OF Prof. D. Forbes and Dr. A. P. Price, of England, has been said to be very successful. The plan consists essentially in precipitating all the solid matter of the sewage by means of a natural phosphate of alumina found in very large quantities in the West Indies. To deodorize foul sewage, the phosphate is powdered and then treated with sulphuric or hydrochloric acid, by which means it is decomposed and rendered soluble. The solution thus obtained—which is said to fully arrest putrefaction and render the most fetid matter free from all offensive odor—is mixed and agitated with the sewage in tanks. Then on allowing the sewage to remain quiet, all its solid matter previously held in solution is precipitated, and the effluent water is pure enough for discharge into streams. But to render this still surer, a still greater clarification can be effected by adding, during the operation, a little milk of lime which precipitates the phosphates in solution. When the effluent water is used for irrigation, the milk of lime is not added. It is claimed that this water is more valuable, bulk for bulk, for irrigation than the raw sewage, because, instead of losing any of its mineral fertilizing matters, it has become slightly richer in saline ammonia.

THE GEOLOGICAL SURVEY OF MONTANA.—F. V. Hayden, who is conducting the Geological Survey of Montana and adjacent Territories, under authority of the Secretary of the Interior, has just issued his fifth annual report, which is pronounced by the *Journal of Science*, as one of unusual interest. It gives a full account of his explorations of the Yellowstone Geyser region; a digest of which is concluded in our issue of this week. Dr. Hayden's special report is followed by a preliminary report on the minerals, thermal waters, etc., by Dr. A. C. Peale, who finds that the silicious deposit of the springs, (geyserite, a variety of opal) afforded in one analysis, silica 83.83, water 11.02, chloride of magnesium 4.00, loss 98.85, specific gravity 1.8, hardness 5.

MAN WORK.—A man's total outward work, his whole effect upon the world in twenty-four hours, has been reckoned about 350 foot-tons. That may be taken as a good "hard day's work." During the same time the heart has been working at the rate of 120 foot-tons. That is to say, if all the pulses of a day and night could be concentrated and welded into one great throb, that throb would be enough to throw a ton of iron 120 feet into the air; and yet the heart is never weary.—*Dr. Van der Wyde.*

RIO JANEIRO, and various places on the high plateaus of the interior of Brazil, indicates that the light is derived from the sun by reflection, and the absence of polarization, which is quite differently, though not positively, ascertained, tends to show that the matter reflecting the solar rays is not gaseous, but made up of solid particles, scattering the light irregularly.

The results are somewhat in conflict with some of the reported observations of Mr. A. C. Ran-yard, made at an earlier date.

OZONE-GENESIS.—Dr. Pincus states that if perfectly pure dried hydrogen gas is caused to burn, in a very small flame, from a jet ending in a very fine point, the smell of ozone is very distinctively perceived, and it becomes more conspicuous if a dry and clean beaker-glass is held over the flame. When, by the aid of a properly contrived apparatus, the combustion takes place in pure oxygen, the same phenomenon is observed.—*Chem. News.*

THE agricultural resources of the Territories, is reported upon by Prof. Cyrus Thomas. Reports are also given on fossils, geology, paleontology, etc., by different members of the Survey. The volume contains a very large contribution to our knowledge of the physical features and condition, geology, natural history, etc., of a large part of the Rocky Mountain region.

DARA'S MINERALOGY.—Appendix to the last edition of *Dara's Mineralogy* has just been issued. It contains 24 pages, 8 vo., and has been prepared by Prof. G. J. Brash. It contains descriptions of 87 minerals by him during the past four years.

FARMERS IN COUNCIL.

San Joaquin Farmers' Club.

The San Joaquin Farmers Club met at one o'clock p. m., Saturday May 4, Dr. E. S. Holden, President, in the chair.

W. H. Fairchild, on the part of committee appointed to reply to the letters from the Secretary of the Sacramento Farmers' Club, in relation to damage to crops, requested and was granted further time to report. He stated that the grape crop in this section of the county was not materially injured; he thought, likewise, that the grain was good for half a crop. Mr. Wright, from the same committee, reported that from his own personal examination, he was satisfied that about half a grain crop was all that would be obtained.

On motion, the Committee on Grain Sacks was discharged.

Mr. Fairchild, from the committee appointed at the last meeting to inquire into the practicability of having an early test of threshing machines, reported that the committee had been unable to find any early grain field near Stockton that would be suitable for the proposed test. He promised to report to the Club as soon as a convenient and suitable field could be found. He thought that in order to make the thing a success some means should be devised to raise—say \$500 or \$600 for cash premiums. Mr. Wright said it would cost him at least \$40 to move and run his machine one day, and he was not willing to spend money for the benefit of manufacturers who themselves should foot the bills. He thought the test should be postponed until late in the season. Mr. Fairchild thought that a test made late in the season would not result in any benefit to the producer; he wanted the benefit to accrue the coming harvest. Next year something new might come up and be better than anything we now have. Mr. Kerriek said that Mr. Nichols, one of the manufacturers of the Vibrator, was now in this State, and had authorized him to put in a Vibrator threshing machine in any trial that might come off, at the manufacturer's expense. Mr. Wright suggested that the agents for the manufacturers of other machines be invited to come and participate in the proposed trial, at their own expense. The suggestion was adopted.

Mr. Fairchild moved that Mr. Holden be added to the Committee on Threshing Machines. The motion was carried.

The President called the attention of the Club to a number of stock and agricultural journals on the Secretary's table. Mr. Overhiser suggested that the Secretary be instructed to place a list of these journals, together with the places of publication and rates of subscriptions, in a conspicuous place in the Club room.

Mr. Phelps called the attention of members to the fact that the Club Labor Exchange was in operation, and that a number of men, anxious to obtain employment, were on hand. The President stated that the membership of the Club now numbers one hundred and fifty five, and he hoped efforts would be used to swell the number immediately to no less than five hundred. The question of the day, "Taxation," was taken up and discussed by Messrs. Smyth, Hitchcock, Wright, Phelps, Fairchild, Ketchum, Stetson and others. It was generally conceded that under the new law everything is assessed too high, Mr. Stetson, only, differing from the views generally expressed by other members. The latter gentleman contending that his property had been assessed at a fair valuation. It was a matter of law, and he considered that nothing could be done but submit to its operation. Messrs. Wright, Hitchcock and Ketchum thought that something could be done if the people only determined to do it. Mr. Smyth stated that he knew of his own knowledge that property in San Francisco was not assessed at anything like its real value; while in San Joaquin county, land was assessed generally for more than it could be sold for, and in addition to that, the improvements on the same land were assessed. Mr. Hitchcock agreed with Mr. Smyth and said he, of his own knowledge, knew the facts to be as Mr. Smyth had stated. Considerable discussion was had in relation to the assessment of growing crops at this season of the year, and fixing a fictitious value on the products, or supposed yield, was denounced as an outrage; and the members were severe on the directions of the State Board of Equalization to wait until harvest so that every pound of the cereal yield could be ascertained. Captain Ketchum said he did not see how it was possible to come to any correct conclusions as to the value of growing crops, and thought that the crops, until they were separated from the land, were part of the real estate, and that their separate assessment from that of the land upon which they grew, could be defeated in the courts. He said he was willing to aid in carrying the matter into the courts where he was confident it would be defeated. Other members expressed their willingness likewise, to render aid. Mr. Stetson thought the matter was wholly political, and as long as it was considered necessary to make five or six men rich every year, in this county, for instance, the farmers would have to stand it. He said the great trouble was that the farmers were taxed for property which they did not own, and he explained a clear case of double taxation where there was no increase of property. He thought the only remedy was in political conventions, and in making party political organizations subordinate to taxation and other local questions. Captain Ketchum thought the

subject not a political one; but he agreed with Mr. Stetson as to the means necessary to work a remedy. He said our representatives in the Legislature had not done as they promised to do. Mr. Hitchcock wanted to know in this connection what had become of our two hundred and fifty thousand dollars in Western Pacific Railroad bonds? We are, he said, paying interest on the bonds and receiving no dividends on our stock. He said the Board of Supervisors had not, in his opinion, done their duty in the matter. Mr. Fairchild said he would like to aid in doing something that would help to defeat the payment of the tax to be levied to pay the assumed mountain county debts. Mr. Wright thought the only thing that could be done was quietly to discuss the matter, and he hoped to see the subject inquired into by all the clubs in the State, and if necessary, test the legality of the assessments in the Courts. Mr. Fairchild said he had no hope from the Courts, and denounced conventions, platforms and parties as swindles. He said that the people of California were paying taxes enough to equal the whole interest on money in "old fogey" countries. He thought the only remedy was to put men in office and not demagogues. Mr. Phelps thought it would be well to appoint a committee to confer with the County Assessor as to the assessment of property of uncertain value. Mr. Hitchcock moved the appointment of such committee by the Chair, with instructions to investigate and report. The motion was carried, and the President appointed Messrs. Hitchcock, Ketchum, Phelps, Stetson, Smith and Walthall, said committee. The assessment of property of uncertain value was discussed quite at length by several members.

The club, on motion, passed a vote of thanks to Hon. A. A. Sargent for agricultural reports, for 1870; also to the Commissioner of Agriculture for seeds furnished the club; likewise to John Sedgwick, of Stockton, for his importations of superior breeds of poultry, comprising Silver Spangled Hamburgs, light and dark Brahmas, Black Spanish, and Bantams.

John Sedgwick was, on motion, elected an honorary member of the club.

The subject selected for discussion next Saturday is: "Effects of thick and thin sowing of grain; or quantity of seed per acre."

On motion the club adjourned.

Sacramento Farmers' Club.

Festival.

One of the least pretentious and most enjoyable occasions that it has been our lot to witness for many a day, came off at Pioneer Hall on Saturday afternoon. It was called the Farmers' Club festival, but partook both of the nature of a strawberry festival and rural picnic. The common feature of picnics, going from the town and city to the country, was reversed, and the farmers and their families came from the country to the city, bringing with them the luxuries of the season, strawberries and cream, from their gardens and dairies, and pure wine from their wine cellars. As box after box of the luscious fruit was brought into the hall, they were quickly opened and hulled by the ladies and misses present, and anon the long table was groaning under a plentiful supply of various kinds of cake, heaping fruit dishes of tempting berries, and rich and fresh cream. All things being ready for business, President Baker in a few appropriate remarks called the club to order, and stated he awaited the pleasure of the club. As might have been expected under the circumstances, a motion was made and quickly passed, that all business of the club be dispensed with until after the practical discussion of small fruits had taken place, and a cordial invitation was extended to all present to help themselves. As we anticipated, the hall was well filled, and we noticed a number of our business men of the city and their wives and daughters present, and all seemed very familiar with the most valuable qualities of the different varieties of berries, such as the Triomphe De Grand, Wilson's Albany, Leonard's White and Longworth's Prolific, as the most experienced horticulturist present, if we are to judge by the evident satisfaction with which they discussed them. We heard it remarked frequently, that the Sacramento berries were much higher flavored and more compact than those sold in our markets from the Bay counties of Alameda and Santa Clara. This is a fact which has heretofore been too much lost sight of by our people, and which should be more generally understood and appreciated. There is no reason why our market should not be supplied by our own growers, with berries of a superior quality, fresh from the vines of our own county, and we trust the Farmers' Club will see that in the future this is done.

Address and Essay.

The feast over, Mr. J. R. Johnston, Chairman of the Committee of Arrangements, being called upon, made a very happy and appropriate address on the pleasures and trials of a farmer's life, commending the cultivation of small fruits both for pleasure and profit, and urging the adornment of the farmer's houses with flowers, vines and shady lawns. Calling upon those present not only to instill into the minds of their children a general love of country, but to teach them to love the soil from which we draw all our support, and winding up with a cordial expression of welcome to all the friends of the club who had cheered them with their presence on the occasion. Mr. James Kutter, of Florio, read a very practical and valuable essay on

the cultivation of small fruits which we hope to publish in a future issue.

New Zealand Flax.

W. R. Strong, through Robert Williamson, presented to the club for distribution a sack of New Zealand flax seed. The seed was accompanied with samples of the leaf of the flax in its natural state and with the fiber in all stages of manufacture, and a small sample of cloth made from the flax. A portion of the seed was distributed among those present, and the fiber and cloth were much admired, especially by the ladies, one of whom suggested that it might be well for the club to encourage the cultivation of the flax by offering an appropriate premium for the first pair of pants made from flax grown from the seed this day distributed. The club approved of the suggestion and, on motion, a premium of fifty dollars was offered for the first pair of men's pants of a size sufficiently large for the present President of the club.

Mower Trial.

A member of the club called attention to the fact that there is at the present time a considerable competition between dealers in agricultural implements and machinery, and that it had been suggested that a trial of mowers under the auspices of the club might result in benefit, both to dealers and to farmers. The club approved of the suggestion and a committee of three, consisting of Dr. Manlove, Wm. M. Haynie and E. F. Aiken, were appointed to make the necessary arrangements for such trial and to conduct the same and report to the club the result. At a meeting of the committee it was agreed to hold the trial on Saturday next, to commence at 10 o'clock a. m., on such field near the city as may be agreed upon, provided that at least five different kinds of mowers be entered. For the purpose of meeting necessary expenses, an entrance fee of \$10 will be charged each mower entered. The entry to be made with and money paid to the Secretary, I. N. Hoag, at the Pavilion, on or before 12 o'clock m. of Thursday next. We understand that the requisite number of reapers will without doubt enter the field and that a very interesting trial may be expected. If the mower trial comes off according to programme, it is anticipated that trials of reapers and threshing machines may follow.

Contra Costa Farmers' Club.

Regular meeting, Saturday, May 4, 1872, at Walnut Creek.

President, Nathaniel W. Jones, in the Chair. The reading of the minutes of the preceding meeting were dispensed with.

Mr. Hammitt, of the Committee on Constitution and By-Laws, stated that he had prepared a draft of them and left with the Chairman of the Committee, who was not present, and he would ask further time. Granted.

Mr. Pratt moved that a general invitation be extended to all classes: farmers, ladies, and all persons interested in farming, to attend our meeting. Adopted.

Mr. Miller, of the Committee on Circular to the farmers of the County, asked further time to prepare it. Granted.

Mr. Loucks moved that when we adjourn we adjourn to meet at Pacheco, Saturday, May 18, 1872. Carried.

A circular was received from the Oakland Farming, Horticultural and Industrial Club. Corresponding Secretary requested to acknowledge.

President Jones said the Club ought to take some action in regard to grain sacks.

Mr. Loucks said that all sacks at present were in the hands of a few persons, and were held at high rates, in anticipation of heavy crops; but that he thought the crops would be 100 per cent. less than had been estimated, and consequently sacks would have to come down in price.

Mr. Hammitt thought that farmers might save buying a great many sacks by putting up bins and granaries. Thought that we ought to put ourselves in communication with other Clubs; and moved that the Corresponding Secretary, Mr. Loucks, be directed to communicate with the other Clubs in the State, on the subject of sacks. Motion adopted.

The subject for discussion, "The best mode of destroying squirrels," was then taken up.

Mr. Loucks said he found strychnine to be the best agent, and we might save a great deal by pulverizing it in a mortar as fine as flour. Be careful to protect the mouth and nostrils with a cloth so as not to inhale it. Scald the wheat, add a little sugar and stir in the strychnine. Would save nearly one-half the strychnine.

Mr. Pratt said he used it in that way, adding, also, a little flour.

Mr. Hammitt asked which was the best breed of chickens for market, and profit.

Mr. Pratt thought the light Brahma and Cochinchina. The Brahmas at one year old would dress from eight to ten pounds.

Mr. Hammitt moved that the Committees on Constitution and By-Laws, and Circular, be requested to report at the next meeting. Adopted.

Mr. Loucks moved that the proceedings of our meetings be published in the Contra Costa Gazette. Amended to include the PACIFIC RURAL PRESS, and adopted.

Mr. Huston moved that the thanks of the Club be returned to Mr. Opdyke, for the use of his hall. Carried.

Mr. Hammitt moved that the question for

discussion at the next meeting be, "The best mode of harvesting our crops." Adopted.

Adjourned to meet at Pacheco, May 18, 1872. R. B. MILLER, Rec. Sec.

The Vintage of 1871.

The following article from the *Commercial Herald and Market Review* of the 10th inst., is written by one of the best posted wine dealers in the State, and, as will be seen, fully sustains the estimates of the Wine Growers' Association:

Enough reliable data has reached us at this time from the various wine counties of the State, to make a very close estimate of the total amount of wine made during the last vintage. While the grapes were coloring, various experts supposed that the product would reach eight million gallons, from the fine appearance of the vines, which were overcharged with grapes; but the ravages committed by the grasshoppers and sun-blast in the lower, as well as some of the mining counties, far exceeded their expectations, and diminished by more than a million and a half gallons what could have been reasonably expected. Various estimates have since been made as to the entire yield, some of which are unfortunately far above the mark; while others, just as unfortunate and more damaging in their influence, belittle the amount, through gross ignorance. In this latter connection, we allude to a wine article that appeared in the *Alta* on the 2d of this month. The writer sets forth his belief that no more than four and a half million gallons were made last vintage, and gives the puerile reason for the statement that only 800,000 gallons of the previous vintage was exported, that only 1,300,000 gallons were brought to the city, and that therefore, in his opinion, there was not 5,000,000 gallons of surplus, or, to use his own words, "or anywhere like it." These statements were made in the face of the printed report of the Committee on Statistics of the Wine and Brandy Growers' Convention of Sacramento, who placed the yield at 6,000,000 gallons. This convention had representatives from every prominent wine county in the State, and every prominent wine-grower in the State was represented, at least by a neighbor, if not present himself. The committee carefully gathered from each of these representatives a close estimate of his individual district, and submitted the sum total to the convention, which was adopted, after reading, and became embodied in their pamphlet. The proposition to set aside a report gathered under such favorable auspices, by the opinion of a single person, who is no authority on the subject, is simply preposterous.

All the more recently gathered information confirms the estimate of the Sacramento Wine Convention, that the last vintage fully reached six million gallons of wine. This information more than verifies their statements concerning brandy, and in all probability they will be fifty thousand gallons under the real amount distilled at the time the convention met. In careful estimates made from actual yields of a number of individual vineyards, we have found that the lowest yield was four gallons to every seven vines which were six years old and over—this being the average in Santa Clara, portions of Napa, Santa Cruz and Sonoma counties. In Sacramento, El Dorado, portions of Napa, Solano, Stanislaus, San Joaquin and Amador counties, the yield was one gallon of wine to every two vines. In Los Angeles county, in fair years, the yield is three gallons to every five vines. Now, in the Sacramento Convention it was admitted as a fact, that there were in the State fifteen million vines in full bearing—that is, six years old; and taking the lowest produced average for last year for only these fifteen million vines, we ought to have made eight million seven hundred thousand gallons of white and red wine. Deducting from this one and a half million for the losses in Los Angeles; another half million for losses in the mining counties, and seven hundred thousand for distillation, we still have six million gallons left, with fifteen millions vines from five years to one year old, to furnish us with all the grapes we may have used for the table. The yield of these latter fifteen million vines, estimated from their respective ages, would be over twenty-one million pounds, giving thirty pounds of grapes to every man, woman and child in the State for eating.

POWDERED COAL FOR UNHEALTHFUL PLANTS.

—In a communication addressed to the *Revue Horticole*, the writer states that he purchased a very fine rose-bush, full of buds, and, after anxiously awaiting their maturing, was greatly disappointed, when this took place, to find the flowers small, insignificant in appearance, and of a dull, faded color. Incited by the suggestion of a friend, he then tried the experiment of filling in the top of the pot around the bush, to the depth of half an inch, with finely pulverized stone coal. In the course of a few days he was astonished at seeing the roses assume a beautiful red hue, as brilliant and lively as he could desire.

He tried the experiment upon a pot of petunias, and soon after all the pale and indefinite colored ones became of a bright red or blue, and the white petunias were variegated with beautiful red stripes. Some of the lilac petunias became a fine dark blue. Other flowers experienced similar alterations; those of a yellow color alone remained insensible to the influence of the coal.

AGRICULTURAL NOTES.

CALIFORNIA.

AMADOR.

Ledger, May 11: BRIGHT PROSPECTS.—The timely and copious rains of the present week has revived and given new life to the vegetable growth of the foothills. Crops of all kinds will now mature without danger of further drawbacks. The frosts in a few localities have done some damage to early peaches, but other fruits appear to be uninjured. The grape crop bids fair to be abundant and of a superior quality, and certainly our farmers will have no cause of complaint in regard to the coming grain and hay yield. We learn from Ione and Jackson valleys that the crops are looking remarkably well, indicating a yield surpassing former years. In all branches of agriculture in the county the outlook is truly cheerful.

BUTTE.

Record, May 11: Grain on the Honcut is said to be looking finely, and bids fair to yield an abundant harvest. The late sown grain on the bottom lands is now of good growth and excellent color, and should it receive a few showers, will produce abundantly. It is not yet safe from the effects of a drouth, or long continued north wind, unless the top soil should be again moistened. There is moisture enough in the subsoil for all purposes if the north wind does not dry the upper soil to a hard crust. The grain on the bottom lands along the Honcut is about a month behind that on the uplands, owing to the soil being so full of water and its consequent coldness.

UPPER SACRAMENTO VALLEY AGRICULTURAL SOCIETY.—At the annual meeting of this Society held at Chico on the 4th inst, General Bidwell was chosen President, Harman Bay first Vice President, Geo. J. Bowen, Secretary, and O. H. Chapman, Treasurer.

CROPS.—We learn from a gentleman just in from the Buttes that the crops in and around the foothills are rather light, but on the plains between them and the river they are looking excellent.

WOOL.—The wool transactions of the last day or two show prices ranging from thirty-five to forty-two and one-half cents per pound, the latter being the extreme limit.

FRESNO.

Expositor, May 8: LOWER KING'S RIVER DITCH COMPANY.—Mr. D. Bush, one of the owners of the above named ditch, informs us that the water running in it is taken from King's river and that it is sixteen feet wide and three feet deep and seven miles long, and runs through the Lake Settlement, and in time will empty into the lake. This company is composed of twenty-six members, and on an average, each man irrigates forty acres at this time and could with the present amount of water irrigate double as much, and most probably will next season. The ditch will be made to accommodate one hundred farms of one hundred and sixty acres each. In the future we look for something great from this worthy and much needed enterprise. There is a quantity of railroad land in that vicinity which can be cultivated with profit with very little trouble or expense, as the ditch runs directly through that land.

FINE CATTLE.—Mr. Creighton crossed a band of three hundred Texas cattle at Kingston, which he brought from Texas some two years ago, on Tuesday of last week. These cattle have been kept on and near Deer Creek, in Tulare county. They were being driven to market via Gilroy. This drove of cattle is said to be the finest and fattest that has been sent from Tulare county in many years. They are expected to bring \$60 a head. There are several other bands, belonging to the same party, and from the same place on their way to market.

NAPA.

Reporter, May 11: DISAGREEABLE.—For the past two days a very hot and sultry north wind has prevailed, exceedingly unpleasant to the senses, and undoubtedly unfavorable to the crops. Should it continue for a few days more, we shall have to report a considerable deduction on the value of the coming crop in our valley. These northerly generally last three days. Probably by the hour this paper appears, we may have been restored to our wonted good weather. In that case the aggregate damage to crops will not have been very great. In the San Joaquin region, the hot, dry winds of two weeks ago promised to cause considerable injury, but a kindly shower of rain put a new complexion upon the weather, and letters of this week speak hopefully of the crop prospect.

OUR LOCAL MANUFACTURES.—By degrees Napa City is bringing within her borders several important branches of industry, which tend to promote her prosperity and expand the number of her population. We have now an extensive tannery, and one pelt factory which tans skins for glove-maker's purposes, and prepares wool for market on a large scale. We have also a brewery which is carried on by Mr. Philip Pfeiffer, and supplies a large number of customers. We have also a glove and a whip factory, a cooperage, a marble works, and an extensive lumber manufactory.

NEVADA.

Grass Valley Union, May 12: WEATHER. The weather yesterday was very ugly. There was rain and sleet and a general anti-pic-nic demonstration on the part of the weather. The wind came from the north, from the south, from the northeast and from the southwest, from the east and from the west, in short it was from all points and sub-points of the compass every few minutes. It kept the weathercock busy in pointing out the points. High up in the Sierra Nevada mountains the forked lightning flashed across the black clouds. William Boston, Esq., the telegraph operator, stood back from the wires, a good time, in a very respectful manner.

PEACHES.—There will be a scarcity of mountain peaches this year, and those who use that fruit will have to depend on the inferior quality produced in the valleys. In Morehouse's orchard, one of the most extensive in this vicinity, there is not a peach on any of the trees. Ike Weed's orchard has no peaches, the hail of three or four weeks ago having stripped the trees of blossoms and fruit buds. Payne's orchards has plenty of peaches and it is the only one here which can say the same. Payne's place is so located that frosts never destroy his fruit crops. Apples by the million, however, will be gathered in this vicinity.

SAN BERNARDINO.

Express, May 4.—About five-sixths of the orange crop of 1871-2 has been shipped to San Francisco thus far. The crop is stated by competent judges to be at least five times as large as last winter's crop, and that portion of it already shipped is estimated at 24,000 boxes or about 5,000,000 oranges. The inferior lots brought \$7 per thousand, the average bringing between twenty and thirty dollars, and some extra fine sold as high as thirty-five dollars.

Grizzlies are said to be unusually numerous in Tejuca cañon at present. A day or two ago five of them got after a Mexican and made things pretty lively for him for about half an hour, and night before last a hunter "strolling" around in the moonlight came near being gobbled by one he chanced on in a cañon.

Elmore Squires, a youth of some sixteen summers, killed two California lions, with a six-shooter, one night last week, in the Lantirgo Cañon. During the six weeks previous these lions, and possibly some others, had stolen twenty-six sheep from his father's flocks.

The corn-fields of Los Nietos and El Monte will this year cover a greater area than ever before. That portion of the crop already planted and up is looking well and thrifty.

STANISLAUS.

News, May 10: A FINE SIGHT.—A gentleman of good judgment and great experience, who has but recently returned from a trip west of the San Joaquin river, in this county, goes into ecstasies in speaking of the wheat fields of that region. To him a trip to the world renowned Yosemite would sink into insignificance in comparison to a sight at the beautiful fields of that now interesting portion of our valley. Among the many marvelous and beautiful sights that fell under his observation, was a wheat field belonging to Mr. Bronson, a short distance from Grayson. The field is one of twelve hundred acres, sown to wheat, that is just beginning to bloom, and is now full five feet in height, of a development and regularity rarely ever met with in any other country.

WOOL.—Geo. Buck, commission merchant at this place, on last Wednesday, shipped sixty bales of wool to San Francisco. The same party has yet one hundred and fifty bales on hand for shipment.

A CURIOSITY.—A curiosity made its appearance in the sheep fold of Mr. Leitches, one day last week. The novelty is a two-tailed lamb. We understand that both the caudal appendages are perfect, and the little fellow is quite frisky.

SANTA CRUZ.

Sentinel, May 11: CROPS.—From every section we hear favorable reports of crops. This year California will literally be the

Egypt of our continent. In Santa Clara valley the grain crop is mostly first rate; only one or two grain fields in sixty miles of travel over the valley was noticed but what were good. The hay crop is a fair average. On the mountain slopes several fine fields, along the road, indicated a large return. In this county the crops are always good unless too strong and fail from rust or lodging, an evil not anticipated this year.

FROST KILLED.—All the leaves on the sycamore trees in Santa Clara valley, and most of the early shoots of the grape-vine have been frozen off close to the bud, by the recent frosts. The grapes are again growing finely and promise fruit, but the sycamores are as destitute of leaves as in winter.

New potatoes, green peas, strawberries and other spring luxuries are in abundance and very cheap in this market.

SAN JOAQUIN.

Republican, May 10: HEEDING THE WARNING.—We are glad to hear that the farmers on the west side of the river are heeding our suggestions concerning the importance of taking precautionary measures against the possible loss of grain by fire. The best preventative thought of, and the one which will most likely be adopted, is the cutting of a strip of grain of sufficient width from the river to the foothills, and after removing the hay, plowing up the ground. If this plan is adopted and the strips are cut across the valley, say a couple of miles apart, a fire that will sweep over an extensive section will be almost impossible. Those who cannot afford to lose the grain on the strips to be cut may be paid for their loss from a fund raised from a pro rata taxation on all concerned.

THE CROPS.—Anything about the wheat crop is in order now, and as harvest is approaching the estimates of the yield ought to be nearly correct. The last rains were showers of gold. Every drop of water was a pearl of great price. Much of the late sown grain has come out handsomely and will make a good crop. Taken altogether, the prospect is good—much better than many farmers expected a few weeks ago. Within the past few days, some of our largest grain growers have expressed the opinion that the average yield of the entire valley will exceed two-thirds of a full crop. This is probably as near the true figure as can be reached at this time, and will insure the product of an immense amount of wheat.

SOLANO.

Independent May, 7: The committee appointed by the agricultural meeting in Suisun, some time since, met in that place last Saturday, with a fair attendance. Upon comparing notes it was found that Yolo County would not join the Society, as she is already attached to the Northern District Agricultural Society, with headquarters at Marysville. Mr. Hilborn reported favorably from Napa. He had heard from Sam. Brannan, Nathan Coombs, Thompson, of Suscol, and others by letter and otherwise, and they, not only approve the Society, but promise to give it hearty support. The committee were much encouraged with the prospect. They called a meeting of all interested citizens of Solano and Napa counties, in Vallejo, Friday, the 24th inst., to perfect a permanent organization, agree upon its location and transact such other business as may come before it.

TULARE.

Times, May 4: Our special reporter took a trip to Kingston this week, in search of items for the readers of the *Times*. He found everything in that locality in an exceedingly prosperous condition. Mr. Bliss has his ferry in successful operation, and cattle passing over it en-route to the bay, make business lively for him. Crops in that region look remarkably well. Kings river will give a palpable account of her agricultural abilities next harvest. The races attracted a large concourse of people. The result is given elsewhere. Twenty dollar pieces were so plentiful on the occasion that our reporter could hardly persuade himself that the halcyon days of '49 had not returned.

GRAIN, in the vicinity of the Merced river and along Mariposa creek, in this county, never looked better than at present. We saw a field of barley of about a thousand acres, near Hopeton, on the Merced, which stands fully four feet and a half high, and is well headed out. This field is the property of Mr. Daniel Ingalsbe and the sight of it would gladden the eyes of any one who "knows anything about farming." The grain in the vicinity all looks well, and gives promise of a bountiful yield.

OREGON.

Willamette Farmer May, 4: WILLOW CREEK, UMATILLA Co.—Eastern Oregon no longer forms an unimportant integral of the State of Oregon. Her resources are beginning to be known and felt—her bleating flocks and lowing herds are looked to with peculiar interest, by both the manufacturer and lover of good beef and mutton. If the Willamette can produce the best wheat, Eastern Oregon can raise the finest calves and the sweetest beef. On our rich bottom land we can produce as fine vegetables as can be found in any market. Corn does much better here than in the Willamette.

A correspondent near Salem, April 30, says: Western Oregon being the Egypt of this State, it is bad policy in us to run much grain lands in grass, and come in competition with our Eastern neighbors in rearing stock, as they can never make two dollars to our one in raising good stock. Their millions of acres of prairie lie open to stock the year round, and such bunch grass as they have there, cannot be exceeded in America—without any seeding down or any expense. Not the 20th acre there is good, arable land, while in Western Oregon, a large proportion of our hill and dale lands is excellent for cereals and gardens. The wild grasses in Western Oregon are mostly eaten out. A sufficient number of cows and horses for domestic use, can and ought to be kept in the coast region of our State. Our tame grasses, and the vast amount of hay and root crops can keep our cows and horses in fine condition the year round, with the addition of some oats and mill feed to the work horses. There is a strong inducement offered here to Eastern dairymen. The price of good butter commands the year round, on an average, thirty cents per pound in coin.

It is well known that all original land titles are good in Oregon. Buyers of land here can always ascertain from the records of our courts, as to any liens or judgments against lands offered for sale.

Walla Walla Union, May 4: MAY, thus far, has been what it should be. The weather has been very warm and pleasant, and with the month commenced the first real warm spring weather that we have had since in the month of March.

A number of men have left this place and gone to Clearwater to engage in cutting ties for the W. W. & C. R. Railroad. There is a prospect of work for a large number of men there for some time to come.

FISH.—During the last few days of warm weather we have seen more fish in town than for a long time before. They are mostly salmon trout and mountain trout, with now and then a fine large salmon.

WASHINGTON.

Kalama Beacon, May 3: EASTERN WASHINGTON.—One of the greatest peculiarities of this country is its mild climate. At this place, in latitude 46° we seldom have snow before Christmas, and throughout the fall, or more than two months, we have the most delightful weather, generally frost at night, with bright, warm days, the thermometer ranging from 55° to 70°.

Singular phenomena, peculiar to this territory, are the periodical warm breezes through the fall and winter, which spring up away down in the valleys of California, break through the low passes of the Sierra Nevada range, on the head of that mountain, on the head of the Sacramento, and passing through by the Klamath lakes, sweep along the base of the Blue Mountains and warm up the whole atmosphere beyond the 49th parallel.

Horses and cattle are seldom fed here during the winter, even as far north as the 46th parallel, but graze all winter on this dry grass which through the dry fall, has become cured standing, so that it is nearly equal to timothy hay.

The atmosphere is salubrious and remarkably free from miasmatic impurities.

Wheat, rye, oats and barley grow finely without irrigation, in all our soils which contain clay and loam, and can be raised on the sandy portion of the valley with irrigation. Four or five years ago, when our valley contained a population of less than 9,000 souls—all told—we raised about 1,000,000 bushels of grain, 700,000 of which was wheat.

We generally raise the variety known as "Club," and sow it in the fall or spring.

We produced about forty bushels of corn to the acre, of the Yellow Dent variety, and it ripens nicely by the 1st of September.

The potato is perfectly at home here, and grows large, fine and mealy.

The Hot Springs and Geysers of Montana.

[Concluded from page 173]

The Yellowstone Basin a Volcanic Crater.

This basin has been called the vast crater of an ancient volcano. It is probable that, during the Pliocene period, the entire country drained by the sources of the Yellowstone and the Columbia was the scene of as extensive volcanic activity as that of any portion of the globe.

It might be called one vast crater made up of thousands of smaller rents and fissures, out of which the fluid interior of the earth, fragments of rocks and volcanic dust have been erupted in unlimited quantities. Hundreds of the cones of these volcanic vents are now remaining, some rising to a height of 11,000 feet above the sea. Mounts Doane, Langford, Stevenson and over a hundred other peaks may be seen from any high point on either side of the basin, each of which was once a center of eruption. Indeed the hot springs and geysers of this region are only the closing stages of that wonderful period of volcanic action which began in Tertiary times—the escape pipes or vents for those internal fires which were once so active, but are now dying out.

Even at the present time there are connected with these manifestations of internal heat, earthquake phenomena which are well worthy of attention. Shocks are not uncommon and are, at some seasons of the year, very severe.

Yellowstone Lake—Singular Parasite—Formation.

Yellowstone Lake is about 22 miles long, averages 10 or 15 miles in width and has an unusual average depth, although the greatest depth is about 300 feet. It is fed by the snows which fall upon the surrounding mountain ranges and is the most beautiful sheet of water in the West. The clear green shading, with the deep ultramarine hue of the waters, adds not a little to the effect of the scene. The lake has at all seasons nearly the temperature of cold spring water. It lies 7,427 feet above sea level. But one species of fish were found, a trout, weighing from 1 to 3 pounds each. They are very abundant, but generally infested by a singular parasitic worm, which (called *Dibothrium cordiceps*) is found in the abdominal cavity, or interwoven in the muscular portions in sacs or cysts; or sometimes in the gills. Possibly this diseased condition of the fish is caused by the proximity of the hot springs so abundant all around the lake shore and sometimes extending far out into the waters.

The lake basin is probably due in part to erosion. All along its margin are high banks and terraces composed of a modern stratified deposit, passing up into an aggregation of sand, pebbles, etc., which is often cemented into a tolerably firm conglomerate. These deposits, made up of eroded volcanic rocks, have sometimes the white appearance, and somewhat the composition, of the Pliocene clays, marls and sands of the lake-basins along the Missouri and the lower Yellowstone. In the northern portion of the basin these deposits reach a thickness of 300 to 600 feet and must be of the later Pliocene age, perhaps extending down to the present time. The two lakes were then connected, although probably never completely united. The belt of mountains which separated them was about 4 miles wide. It is estimated that, since the period of volcanic activity, the lake has been about 500 feet deeper than at present. During the time of the greatest volcanic action, the water must have covered the loftiest peaks, for many of them are composed of the breccia or conglomerate in a regularly stratified condition. The area of the lake is now gradually, but very slowly diminishing.

Hot Springs—Brimstone Basins—Sulphur Mt.

On the shore of the southwest arm of the lake is a group of hot springs covering a belt 3 miles long and 1 mile wide. These springs have built up a series of beds or strata, 25 feet thick in the aggregate, composed of laminae of silica. The shores are covered with the decomposed siliceous crust.

Many of the springs are constantly boiling with violence, but rise and fall every second or two, with each pulsation throwing out a small quantity of water. Quite a pretty symmetrical funnel-shaped crater is found, with a circular rim varying from a few inches to several feet in diameter. Some of these chimneys extend out into the lake several feet, and hot spring deposits may be seen through the clear depths for 50 yards. The same variety of colors, quiet and mud springs, old ruins, etc., as before described, occur here, but, but no geysers.

On the east and northeast side of the lake are groups of living and dead springs. High up on the mountain sides are two extension patches of siliceous deposit, resembling at a distance an immense snow bank. They are called brimstone basins by the mountaineers, on account of the great quantities of sulphur mixed with the silica.

At Steamboat Point two vents constantly pulsate, throwing columns of steam to a height of 100 feet or more. Dead and dying springs in great numbers occur along the shore and high up among the foothills, a mile or two from the lake. One of the most conspicuous of these great white hills is called Sulphur Mountain, at the north end of the lake. The summit of this deposit, from 50 to 150 feet thick, rises 600 feet above the lake. Silica predominates, mixed with oxide of iron, sulphur, etc. At the

foot of the mountain are a few springs with a temperature of 150° to 180°.

East Fork of the Madison.

Leaving the Yellowstone Basin and pursuing a westerly course we cross the high range between the Yellowstone and Madison rivers, striking first the sources of the East Fork of the Madison. Groups of dead and dying springs are met every few miles. One locality, covering several acres, is most beautiful. The entire area is covered thickly with conical mounds of various sizes, ranging in diameter from a few inches to a hundred feet or more, and full of orifices from which streams were issuing. All these little orifices are lined with brilliant crystals of sulphur. The basis of the deposit is silica, white as snow, but variegated with every hue of yellow from sulphur and with scarlet or rose color from iron oxide. In the distant view the appearance of the whole country may be not unaptly compared to a vast limekiln in full operation. The east branch of the Madison is almost entirely fed from the hot springs and its temperature is 60° to 80° all the time. The vegetation along its branches and in the stream itself is a marvel of luxuriance. The mountains on either side are composed of basalt and obsidian. Surface waters render the valley one vast bog.

The springs grow more abundant as one proceeds down the valley and near its junction with that of the Madison occurs, on both sides of the stream, a large group of boiling and quiet springs, with basins from a few inches to 50 feet in diameter, and temperatures ranging from 100° to 197° F. At this elevation the boiling point is 192° to 196° F.

Great Geyser Basin of Firehole River Architectural Fountain.

From the last mentioned springs one crosses between isolated buttes of basalt and hot spring material, into the Great Geyser Basin of Firehole river. The entire valley, 3 miles wide here is covered with a snow white siliceous crust, and columns of steam rising among pines on the hillsides, denote the presence of springs. Some of these have most beautiful basins.

In the Lower Geyser Basin are many inter-



THE PRINCIPLE OF THE ARTESIAN WELL.

esting springs, riddling the whole area of 3x5 miles, but no geysers of the first class. Geysers however, there are, with rather regular periods of activity, throwing up water columns 15 to 30 feet high. One spring here has built up a most elaborate and beautiful cistern. It is called the Architectural Fountain. The whole basin is about 150 feet in diameter. Near the center is the rim of the spring, about 25 feet in diameter. The water is in constant agitation, occasionally spouting up a column of water, 30 to 60 feet high, like an artificial fountain, and filling up the reservoirs and the sides for a radius of 50 feet or more. The siliceous accumulation made by this spring descends for several hundred feet in innumerable semi-circular steps, and is exquisitely beautiful in all its details.

In the Firehole basin silica predominates in the deposits, with little, if any, lime, and small quantities of sulphur.

Remarkable Mud Springs—Interesting Picture.

There is here a remarkable group of mud springs, one with a basin 50 ft. in diameter, which is covered over thickly with puffs, like an immense cauldron of hasty pudding. The exact symmetry of these puffs, their uniform size and fineness of material render them exceedingly beautiful; and there is among them every shade of color, from a bright scarlet to the most delicate pink or rose, with a base as white as snow. The white siliceous clay, when dried, has the appearance of the finest merchaum. The most fastidious manufacturer of porcelain would go into ecstasies over this magnificent bed of mortar, which has perhaps been worked and re-worked for many thousands of years.

These springs occur everywhere, often close to geysers or clear quiet springs, and are in every state of consistency and temperature. When the heat has diminished to 160°, iron oxide is deposited in a coating, which, in the old springs, becomes broken up and is suspended all over the sides like rotten, mouldy fragments of leather. When the springs entirely dry up, these are blown away by the winds.

Near active geysers the surface is covered often with a jelly-like substance. All over the surface are irregular depressions with sharp raised edges, like the inner surface of a cow's stomach. Silicified wood is found in every stage of petrification.

In the early morning this valley presents a most interesting picture, columns of steam rising from a thousand vents and completely shrouding it as with a dense fog. A view of the city of Pittsburgh from a high point would convey some idea of the appearance, except that pure white feathery clouds of steam replace the dense black smoke.

Wonderful Geysers.

Up the Five-hole river about ten miles, and near the source, there is the Upper Geyser Basin, where the great geysers are found.

One geyser, near the center of the basin, operated twice during our stay of two days. First comes a tremendous rumbling and shaking of the ground, then an immense mass of steam bursts out of the crater as from an escape pipe, followed by a column of water eight feet in diameter and rising by steady impulses to a height of 200 feet. The wonderful fountain continues to play for the space of fifteen minutes; then the water gradually subsides and settles down in the crater, about two feet, and the temperature slowly diminishes to 150°. There are here two separate basins, one in constant agitation, while the other plays only at intervals of about thirty-two hours; and although, so far as the eye could detect, there was a partition of not more than two feet in thickness between them, neither seemed to be affected by the operation of the other. The decorations about the springs were beautiful beyond description, out rivaling the most delicate embroidery in variety and complexity.

Sawmill Geyser, with a small elevated crater two feet high, throws up a small column of water about twelve feet, by continued impulses, like the movement of a saw. Castle Geyser has a crater forty feet high, and 150 to 200 feet in diameter, built up of thin layers of silica which rise, like steps, to the chimney on the summit, which is about ten feet high. Clouds of steam issue constantly from this chimney, and every few moments a column of water is thrown up fifteen to twenty-five feet. Another geyser, "Old Faithful," operates every hour, throwing up a column of water, six feet in diameter, from 100 to 150 feet. When about to make a display, very little warning is given. There is simply a rush of steam for a moment, and then a column of water shoots up vertically into the air, and by a succession of impulses is apparently held steadily up for fifteen minutes, the water falling directly back into the crater and overflowing in large quantities. It then ceases, and with a rush of steam for a

broad, situated in a hollow, a quarter of a mile from where the surf breaks on the sandy beach. A ridge of sand hills protects it from the ocean wind and waves, while the rising ground inland affords it some shelter on that side. The mountain on San Pedro Point is an effectual barrier to the southernly gales which occasionally visit the coast. The lagoon is thus securely wind proof, and its placid surface is seldom ruffled by the slightest ripple. The lagoon is the source from which the water for salt is obtained. It is itself fed by springs of both fresh and salt water, some of them rising in its very center. The valley, or hollow, extends for nearly a mile, and two artificial ponds for salt making have been constructed at the south end of the lagoon, each being about 300 feet in length, 150 in breadth and a uniform depth of ten inches.

Artesian Wells.

What are artesian wells? According to Buckland, in his celebrated Bridgewater treatise on geology, the name of Artesian well is applied to any perpetually flowing artificial fountain obtained by boring through strata that are destitute of water which will ascend to the surface, into lower strata charged therewith. The name is derived from Artois, (the Artesium of the ancient Latins) where the making of such wells has for a long time been practiced.

The reason why water will sometimes rise to or above the surface, through a bore hole in the earth, is shown by the following diagram: Suppose *B* and *D* to be two strata of clay, or some formation impermeable to water, and *K* be a stratum of sand or gravel between them. The rain that falls on the hills at either side will filter down through this sand or gravel, and collect in the hollow between the clay strata where it cannot escape. If now we bore down to *K*, the water thus confined will rise to the surface at *H*, or considerably above it. The height will depend upon the pressure of water which has accumulated in the sloping space between the impervious beds. It will be readily understood that it is only where the nature and arrangement of the geological strata are such as we have described, that an artesian well is possible.

Artesian Wells 4,000 Years Old.

Although artesian wells took the name by which they are now known from a French province, where they were first employed in Europe, only about 600 years ago, there are such wells actually existing which are known to be thousands of years older than the history of Artois. Artesian wells were sunk in the vicinity of ancient Thebes, when that city was at the height of its prosperity, or not less than 4,000 years ago. They were sunk by first excavating shafts or wells from six to eight feet in diameter, through about 80 feet of clay and marl, from the bottom of which six and eight inch wells were bored or drilled through about 300 feet of limestone. At the bottom of this limestone the water-bearing sands were met from which the water seemed to have risen and run over the top of the excavated well.

According to Professor Anstead, some such wells which were sunk in the Libyan Desert have been cleaned out in modern times, and successfully restored to use. Other wells, of very ancient but unknown date, were sunk by the Chinese, who have long known and used this method of obtaining water.

AN IGNORANT DOG.—An old farmer went out one day looking over his broad acres, with an ax on his shoulder and a small dog at his heels. They espied a woodchuck. The dog gave chase and drove him into a stone wall, where action immediately commenced. The dog would draw the woodchuck partly out from the wall, and the woodchuck would take the dog back. The old farmer's sympathy getting high on the side of the dog, he thought he must help him. So, putting himself in position, with ax above the dog, he waited for the attraction of the woodchuck, when he would cut him down. So an opportunity offered and the old man struck, but the woodchuck gathered up at the same time, took the dog in far enough to receive the blow, and the dog was killed on the spot. Forty years after, the old man, in relating the story, would always add: "And the dog don't know to this day but what the woodchuck killed him."

few seconds closes the display for the time.

Conclusion.

The two kinds of deposits in these regions, calcareous and siliceous, have been previously mentioned. According to Dr. Peale's analyses the (White Mountain) springs on Gardiner's River deposit carbonate of lime mostly. There are present, also, sulphate of magnesia, chloride of lime, sulphate of soda and a little silica. In the Firehole Basin deposits not a trace of lime was detected, but about 85 per cent. of silica, 11 per cent. of water, and the rest mostly chloride of magnesia; and only a slight trace of lime was found in the water. In but one locality west of the lake, Colonel Barlow found a calcareous deposit. There are, scattered over the great area of about 40x50 miles, a few patches of the sedimentary rocks, and it is most probable that under the deposit of this small group of springs there are portions of the carboniferous limestone.

So far as ascertained in all the deposits of the Yellowstone Basin proper and of the Firehole Basin, silica is the predominant constituent. The springs are, with very few and important exceptions, near the borders of streams below any limestone beds. It is quite possible that underneath the vast masses of volcanic material which compose the mountains on every side, the sedimentary rocks exist, but probably only in isolated and much restricted patches, if at all.

It may therefore be stated, in general terms, that the great hot spring region of the sources of the Yellowstone and Missouri rivers is covered with rocks of volcanic origin, of comparatively modern date.

SALT MINES IN SOUTHERN CALIFORNIA.—The Los Angeles News, of April 21st, has the following mention of a California manufacture:

Southern California has but few manufacturing industries to boast of, but the few it has are, as a rule, paying enterprises. One of them is that of salt making. San Diego and Los Angeles counties have each got works wherein the salt consumed in the Southern counties, Arizona and the Owens river country is manufactured. The article is obtained from the sea water by means of natural evaporation. The Pacific Salt Works, owned by J. B. Trudell, are located on the coast of the north side of San Pedro Point about ten miles north of Wilmington and seventeen miles southeast of this city. The salt works are located on a small lagoon, about 200 yards long by 50

USEFUL INFORMATION.

Good and Poor Varnish.

Good varnish is difficult to get; one trick of the trade is to use but little gum, and putting into the linseed oil, white vitriol and sugar of lead, rendering the oil nearly thick enough for varnish before any gum is added. Another cheat is to make cheap, sticky, worthless stuff by using raw oil without dryers; because, if a black, stiff, worthless article dries quickly (and cracks and scales quickly also), a light colored, limpid, slow drying article must be good.

Twenty years ago we mechanics up here in Vermont made our own varnish and japan; it was the only way by which we could get anything reliable. In the meantime, Mr. Abbott, of New Hampshire, got Moses Bigelow to go up to Concord and make varnish for the carriage shops; and then we commenced buying of Mr. Abbott. Since that time, we have had dealings with all the manufacturers in Boston New York, and Newark, and, until the recent war, generally got good varnish; but during the war adulteration found its way into every manufactory, and even to-day a good article of varnish is perhaps, stored in one cask out of a hundred, and there are two ways to get it. One is to make it, and the other is to eschew dealers and speculators; buy of the maker, pay just what he asks, and, if your custom is worth anything, you will get a good article. Otherwise, doubtful.

The best copal varnish is made as follows. Take three pounds of the best Zanzibar copal gum to every gallon required, pulverize the gum in an iron mortar, and then put it into a copper pot which will hold double the quantity required; fit a cover to the pot with a small hole in the cover, through which to insert an iron rod to stir the gum when melting; heat over a slow fire until thoroughly melted, stirring it constantly during the process. In the meantime, put into another pot and over another fire 1½ pints of raw linseed oil to every pound of gum in the first pot, boiling as usual for ordinary purposes, keeping it hot until the gum is thoroughly melted. Then remove from the fire to a distance of twenty or thirty feet, pour the oil in gradually, stirring at the same time; and while still hot, add sufficient turpentine to reduce the gum to a proper consistency, which can be tested by dropping a little from the end of the rod on a piece of glass to cool in the air.

The gas arising from a hot pot of varnish is very inflammable; and if the steam, by floating around, reaches the fire, it will flash as quick as gunpowder, and the face and hands of the workman will be burned and the varnish set on fire; therefore remove to a distance before adding the turpentine, also have a wet cloth ready to throw over the fire in case of accident. When all is mixed, strain, while quite hot, through and a funnel partly filled with clean flax, through which not a speck of unmelted gum, dirt, or settlings will pass. If flowing varnish is required, add a trifle more oil, with no dryers except a little red lead. If hard or scraping varnish is required, use but half a pint of oil to each pound of gum, and boil hard will plenty of dryers.—*Cor. Sci. Am.*

DIFFERENCE IN THE VALUE OF DIAMONDS.—While many can approximate the value of a diamond, few can appreciate its exact worth. All know it to be the most expensive of all substances (excepting rubies of rare color and size), from its beauty, rarity, and indestructibility. The diamond which first decked some fabulous Indian god would blaze to-day with all its fire if adorning some fair American woman. Not a single sparkle has been dimmed, nor an atom of its weight lost. Where the real difficulty exists is to make the public understand the comparative merits of various gems. In the jeweler's tray many stones may be exhibited. They may be all of good quality, but there is a decided choice. This one may have size and purity of color, yet marred by a single flaw; that one, limpidity, without a flaw, yet defective in shape; while a third, even smaller than the other two, may unite every desirable quality, be in fact almost faultless. Combining, then, every excellence within itself, its value is largely enhanced. The comparison between the price paid for a horse and a diamond is not an inapt one. An animal possessing beauty, health, speed, and docility, commands a price far above another having all these qualities save one. It is precisely the same case with a diamond. A stone approaching perfection possesses a value infinitely above one with a single depreciating quality.

PHOSPHATE CANDY.—The restoration of the phosphorus to bread, which has been removed in the bran, as so successfully accomplished in the Horsford baking powders, is well known both in this country and Europe. We now hear of a novel way of turning our national love of candy to similar benefit, by employing phosphorus instead of sulphuric acid in sour drops. Mr. Charles Allen, of the School of Mines of Columbia College, has invented a phosphated candy, which he prepares by combining one or more of the acids or salts of phosphorus with sugar, thus ingeniously presenting as acceptable form of assimilable phosphorus to those who need some repair of the nervous and brain forces. It is a pleasant way of taking phosphorus as a medicine, and has been deemed worthy of a patent.

A Method of Observing Vibrating Flames.

A cotemporary gives a description of a simple apparatus for observing the phenomena of vibrating or sounding flames. A disk of white card board is constructed with oblong apertures in a radial direction; this is set upon a spindle so as to admit of rotation at the requisit speed.

To examine the flame of a gas light, for instance (the flames being protected by a glass tube from the disturbing effects of air currents), place the disk in front of the light, so that the eye can see the light through each slit as it comes to the vertical position. If now the speed of the disks' rotation is such that the interval of time between two slits passing the eye is just equal to the period of a vibration of the flames, the flame appears to be motionless; but if this velocity of rotation be reduced, the flames will be observed to pass slowly through its changes of form. If the interval is one-half, or one-third of the period of the vibration of the flame, the illusion of a disk having two or three times the number of real slits will be produced. It is only when the periods of flame-vibration and of the over lapping of two successive slits coincide in time, that the flame and disk appear motionless; when this is otherwise, the disk revolves in one direction or the other.

This plan affords a ready means of counting the number of vibrations of a flame, and by substituting a wire for the vibrating flame, the spiral course of the undulations produced in it may likewise be observed. Mr. Charles Watson, who has described the experiment, has made some very accurate observations upon the times of vibrations of flames within tubes of different dimensions.—*Jour. Franklin Institute.*

ENAMEL FOR COPPER COOKING UTENSILS.—A preparation for coating copper vessels used in cooking, especially for cooking acid fruits which attack the copper, forming so-called verdigris, may be made as follows: 12 parts white fluor-spar, 12 parts unburnt gypsum, 1 part powdered borax, all intimately mixed and fused in a crucible. The fused mass is then poured out, and after cooling triturated with water to a doughy paint. The copper vessel is painted inside and put in a warm place, so that the mass dries uniformly throughout. When thoroughly dried the vessels are baked, if small, in a muffle; if large, in an oven, until the mass is fused. On cooling it forms a white, opaque enamel, which adheres very strongly to the copper, and is not removed by ordinary blows or percussion, and protects the vessel from the action of vegetable acids. Vessels thus coated may be used for preparing pickles, sauer-kraut, etc., without danger of copper poison.

USE OF SOLUBLE GLASS IN PAINTING.—Our exchanges still continue to suggest new applications of water glass in the arts; but especially in painting where it appears to furnish a means of applying certain colors to fresh wood or clean iron in a most efficient manner, and at a very slight cost compared with oil. It can also be used advantageously for painting houses, basket ware, decorations for theaters, etc., and is especially suitable in the latter case, as it renders wood incombustible to a certain extent, instead of increasing the danger from fire, as with oil paint. Care must, of course, be taken to use only such mineral colors as are not decomposed by the glass, such as ultramarine, chrome-green, Nuremberg-green, yellow and red earth, ochre, green-earth, terra de Sienna, etc. In coating paper with this paint, a little glycerine may be added to prevent its breaking. Coralline, bonceau, and Vesuvine have also been used to advantage in connection with soluble glass.—*Harper's Magazine.*

TO COAT ZINC WITH IRON.—The objects of zinc are dipped in a warm solution of 150 grammes sulphate of iron, 90 grms. sal ammoniac and 2½ kilograms of boiling water. The sulphate of iron must be free from copper. They are boiled from one to 15 minutes, taken out and the iron deposited removed with water and a brush. This first operation has for its sole object a thorough cleaning of the zinc. They are again placed in a warm sulphuric bath and afterward heated. They are thus covered with a fresh black coating. Without being washed they are put on a brazier of glowing coals and heated as long as sal-ammonia fumes are given off, which requires but a short time.

THREE METHODS OF PREPARING PLASTER CASTS. First, varnish them over with shellac, and the plaster, when poured in, will not adhere to the sides. Second, let the plaster cast absorb some hot bees' wax, which can be applied by means of a paint brush. Third, oil them with sweet oil till they will not absorb, and let them dry thoroughly before using. Or brush them over with melted white wax, and keep moulds hot, so that all wax is absorbed.

RED OR BLUE STAMPING INK.—An excellent red or blue stamping ink can be prepared by making a saturated solution of fuchsin or sublimate blue with pure glycerine, and adding afterwards for the red color madder cake, and ultramarine for the blue, thickening with enough dextrine to give the desired consistency. This color possesses all the peculiarities which are required for good stamping ink.

MALE AND FEMALE VOICES.—Glashier, an aeronaut, says that the voice of a woman can be heard in a balloon when at the height of two miles, while that of a man cannot be heard when higher than a mile.

GOOD HEALTH.

Heat as a Poison.

One of the French journals gives an account of some curious experiments by M. Claude Bernard on the effects of heat upon animals. It appears from these that heat, when it attains too high a degree, acts like a poison, and destroys feeling and motion. It seems to act directly on the muscular element; and the loss of muscular power necessarily produces death by arresting the action of the heart and circulation. The degree of heat which must not be exceeded for cold-blooded animals is from 115° to 120° F., for mammalia 128° to 131°, for birds 140° to 145°. In each case the maximum differs by a few degrees only from the animal's normal temperature.

There is, then, an inward medium, the temperature of which is kept up by that of the blood—a certain atmosphere of heat, so to speak, which should remain unalterable. The artificial increase of this heat leads to the most serious consequences as soon as it exceeds a very few degrees.

To what particular poisons, then, can heat be assimilated? Those must be sought which have a direct action upon the contractile muscular element, such as the *antiar* (the milky sap of the *Upas antiar*), the *vas*, and the *corval*, American vegetable poisons. These substances, probably, have the same chemical action upon the blood as heat.

The precise action of heat upon the blood is thus stated by M. Bernard: The blood of an animal killed by heat becomes black, the oxygen it contains is rapidly transformed into carbonic acid, and finally disappears. This is not a true toxic action, but rather an excitement of the vital and normal properties of the red particles. The black blood of the rabbit killed by heat is still living; it absorbs oxygen by contact with the air, and again becomes ruddy, if the experiment is tried in time. Between 167° and 190° F., however, the blood coagulates, loses its vital properties, and cannot again become red.

Heat above a certain degree kills the muscles without killing the blood. The chemical character of this poisoning of the muscles by heat is the most obscure part of the subject. It now remains for chemists to analyze the phenomena which accompany the muscular rigidity and cessation of motion produced by heat, and thus to solve the problem of the precise action of this poison, as they have done in the case of certain others.

SUNSTROKE.—Dr. George H. Hope, M.D., in his work, entitled "*Till the Doctor Comes and How to Help Him*," gives the following directions for the treatment of sunstroke until medical aid can be obtained: Sunstroke, is a sudden prostration due to long exposure to great heat, especially when one is much fatigued or exhausted. It commonly happens from undue exposure to the sun's rays in summer, but I have seen the same effects produced in a baker from the great heat of the bake-room. It begins with pain in the head or dizziness, quickly followed by loss of consciousness and complete prostration. Sometimes, however, the attack is as sudden as a stroke of apoplexy. The head is often burning hot, the face dark and swollen, the breathing labored and snoring, and the extremities cold. Take the patient at once to a cool and shady place, but don't carry him far to a house or hospital. Loosen the clothes thoroughly about his neck and waist. Lay him down with the head a little raised. Apply wet cloths to the head, and mustard or turpentine to the calves of the legs and the soles of the feet. Give a little weak whisky and water if he can swallow. Meanwhile let some one go for the doctor. You cannot safely do more than I have said without his advice.

BISULPHITE OF SODA IN THROAT DISEASES.—Dr. Tyrell, in the *Pacific Medical Journal*, commends, as a new remedy in this class of affections, bisulphite of soda, given in large and continuous doses. Diphtheria, inflammation of the tonsils, and quinsy, though local exhibitions, have their source in poisonous fermentations of the blood, the same as scarlet fever and other zymotic diseases. It is held that salt prescribed enters into the circulation and retards putrefactive fermentation. Dr. T. failed of success when he administered it in small doses and in three hour intervals; but when he gave thirty grain doses every hour, day and night, so as to saturate the system with the salt, he was almost invariably successful in removing all the severe symptoms in twenty-four hours. He asks physicians to give this medicine a trial, that the curative effects may have more extended proofs.

CONSUMPTION.—The late Dr. Marshall Hall, of England, said: If I were seriously ill of consumption, I would live out doors day and night, except in rainy weather or mid-winter; then I would sleep in an unplastered log house. Phlegm has no nutriment, gasping for air cannot cure you; monkey capers in a gymnasium cannot cure you, and stimulants cannot cure you. What consumptives want is air, not physic—pure air, not medicated air—plenty of meat and bread.

SCARLET FEVER.—A Brooklyn physician considers Turkey figs, boiled in water, so as to make a sort of tea, and mixed with a little fresh brewer's yeast, a specific remedy for scarlet fever. He recommends that this simple preparation be used as food, drink and medicine. Try it.

Prescribing for Infants.

The following sensible hints on this subject are from a lecture by Prof. J. O'Reilly, published in the *American Practitioner* for April 1872: There are two points in the general medication of children to which I wish especially to call your attention. One is the subject of thirst, the other is the intervals at which medicine should be given.

In quite a number of infantile diseases the stomach is very capricious, and to keep it quiet is one of our greatest troubles. This difficulty is often caused by the attendant not understanding the difference between hunger and thirst. The sick child is fretful, and cries and pulls at its mother's breast; and she, willing to do anything that soothes it, permits it to nurse. It sucks, and in a few moments rejects the milk; but cries again, and the mother again yields it the breast only to have the stomach again reject its contents, and thus the fight goes on until the infant is exhausted. The doctor gives medicine to quiet the irritable stomach, and the mother counteracts its effect by over feeding.

What I wish to express is the fact that the child is not hungry; it does not want the breast; but is thirsty and wants drink. In health the breast is food and drink, but in disease the craving is that of thirst, not of hunger, and the stomach which rejects the milk because it is unable to digest it would be calmed by a cool beverage. In other words, were water given to the child in the place of the breast, the stomach would be relieved, and in many cases the child saved. This difference between thirst and hunger in the infant is a point well worth noting.

Medicine should be given to infants in small but often-repeated doses. The interval should be only half as long as that for the adult. The reason for this is that the digestive organs of the infant act much more rapidly than those of the adult, and a medicine to have its effect kept up must be supplied in accordance with its entrance into and disappearance from the system.

THE LIMIT OF LONGEVITY.—INFORMATION WANTED FROM CALIFORNIA.—Sir Henry Holland, in his interesting "Recollections of Past Life," just reprinted, refers to the question whether there is any trustworthy evidence of any human life longer than a century. He himself believes that there have been well authenticated instances of the kind. In the report of the Irish Registrar-General for the third quarter of 1871, the death of six centenarians are recorded. The Registrar of Cookstown District reports the death of a woman aged 102, and a man 108, and says: "I have made careful inquiry respecting these two cases, and have no reason to think their ages are exaggerated; both are remembered as 'old people' by individuals long past their climacteric." In the Dervock District, Ballymoney Union, the Registrar reports "a death at the advanced age of 105 years, authenticated."

It is stated in several medical journals of recent date that "Harvey Thacker, who died recently in California, was 128 years old at the time of his death." If there is satisfactory evidence of this extraordinary longevity, it would be interesting to know more about it.—*Eastern Exchange.*

VARYING EFFECTS OF POISONS ON DIFFERENT ANIMALS.—It is a well known fact that what is poison to one animal may be taken by another with entire impunity. In illustration of this proposition, we are informed that strychnine, so fatal to most animals, may be eaten by certain species of monkeys with perfect safety. In the case of an East India monkey, known as the (*Presbytis entellus*), one grain was first concealed in a piece of cucumber, which was eaten by the animal with no apparent effect. Three grains were afterward given, and with the same result. To test the strychnine used, three grains were administered to a dog, which proved almost immediately fatal. Another Indian monkey, known as the pouch-cheek monkey, has been found to be more susceptible than the Lungoon, but not so much as the dog.

It is also stated that pigeons can take opium in large quantities with no injurious consequence; goats, tobacco; and rabbits, belladonna, stramonium and hyoscyamus.

THE HOOSAC TUNNEL, according to recent official report, has up to December 31st, 1861, required an expenditure of \$6,335,332, exclusive of interest. When the present contractors assumed the management, 9,341 feet had been opened, and on December 1st, 1871, the work had been advanced by 7,737 feet, making a total of 17,078 feet, and leaving 7,953 feet to be excavated. The central shaft has been finished, and the work is now going on at four faces of the rock; much more rapid progress in the future is anticipated. The tunnel, it is hoped, will be finished by March 1874.

STAG PILLS.—Pills "purely vegetable," have been a popular nostrum in this country, but in the Celestial Empire those of a thoroughly animal character appear to be in demand. A Chinese druggist at Ningpo invites the public to swallow "Pills manufactured out of a whole stag, slaughtered with purity of purpose, on a propitious day." The wealthy wholesale druggists are in the habit of purchasing large and handsome stags, which they expose in a pen at the door of the shop until "a propitious day" is selected for the animal's conversion into pills, when he is deliberately pounded entire into pulp, from which pills are made.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.
PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, May 18, 1872.

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A FARMERS' UNION.—The farmers in the vicinity of Arcata, Humboldt county, are very much agitated on the subject of securing a more economical method of marketing their produce. They complain that after the freight, cartage, warehousing, commissions, etc., are paid, there is very little and sometimes nothing left for the shippers. They are accordingly maturing a plan which they think will reduce the expenses levied upon their produce, and to this end propose, as a preliminary step, the organization of a "Farmers' Union," for mutual protection and assistance. If there is any one industry which, more than another, demands encouragement, mutual protection, indomitable energy and unwearied patience, it is that in which the farmer is engaged. We trust good will come out of the movement now being initiated in Humboldt, and when the plan is matured shall be happy to give it circulation through the columns of the RURAL PRESS for the benefit of farmers elsewhere.

MONTEREY AGRICULTURAL SOCIETY.—We learn from the Monterey Democrat, that steps are being taken for the establishment of an Agricultural Society in that county, a preliminary organization having been already had at Natividad several weeks ago, of which W. S. Johnson was chosen President, and H. Mills, Secretary.

Another meeting was called for the purpose of perfecting arrangements and election of permanent officers. We have not heard the result of the meeting. There can be no doubt of the good results brought about by these county societies, and we hope the effort to organize will be seconded by the people in every county of the State, where the attempt is made.

Late Frosts—Choice of Fruit Lands.

Throughout almost all California, or from San Diego to Shasta, with the exception of a few isolated districts here and there, blighting, late spring frosts have occurred, which in many places materially injured the young growth of the grape vine, and in many places, also, the stone fruits have been more or less destroyed.

On inquiry, we find the severity of the frost in some districts to have been modified by a variety of circumstances, generally of a local character, attributable mostly to natural causes. In many of the small valleys among the foot hills, bordering upon the great central basin or valleys of the State, we find the frosts to have been more severe than upon the hills and hillsides immediately adjacent.

Hints to Fruit Growers.

This being the fact, it would be well for fruit growers to carefully observe and make a note of the probable causes of such exemption; as in some cases, doubtless, a hint might be communicated that would prove highly beneficial to the cultivators of fruits, enabling them, to some extent, to guard against the recurrence of a like destruction to vines and fruits by attention to the location of young trees, or contemplated orchard grounds.

A noticeable feature of the effect produced among the more elevated or highland valleys, is, that the portions most affected are generally found to be the very lowest portions, the more moist lands of the alluviums, or the low, wet places where there are such, and particularly do we find that the black or dark colored soils are those most likely to be attacked by the frost; whilst the red lands and all of an ashy or chalky color wholly escaped.

A Reason for This.

We endeavor to account for this to some extent in this way—these low portions of the grounds being generally the wettest and the darkest colored soils, absorb more of the sun's heat during the day than do lighter colored soils, at the same time, these dark soils or their surfaces, during the night will radiate or throw off more heat than a lighter soil, for this is a well known property of light and dark surfaces as connected with the absorption and radiation of heat.

The process of radiation under such circumstances, is to cause a rapid evaporation from the surface, and this in turn would tend greatly towards lowering the temperature of the soil and of course surrounding objects. The gentle or more forcible winds, that usually flow upward through these border valleys of the great central one, during the day, are reversed at night, and come down from the higher country greatly cooled in temperature; these winds carry away the radiated heat from the surface till towards morning, when they cease altogether. It is at this time that the damps and dews of the atmosphere become chilled and the temperature of the air itself sinks below the freezing point.

Its Effects on Vegetation.

The direct heat of the sun on all dark soils is to hasten the spring growth, over the same on light colored soils; hence if, other causes combining, a frost occurs, the earlier growth of the dark lands suffers to a far greater extent than upon immediately adjacent lands of a different description. These sudden changes to the two extremes we have mentioned, occur to all the low grounds of the foothills to a far greater extent than upon the surrounding hills and ridges, or upon the broad valleys of the Sacramento and San Joaquin rivers.

Those who are contemplating the extensive production of nuts, almonds and semi-tropical fruits should look well to both locality and soil, before determining upon their base of operations, and also to the great wind currents, altitude and exposure. Thus the injury by the late frosts, may not be without their corresponding benefits in determining the best sites for future orchards and vineyards, to escape the damaging effects of these frosty visitations.

Orchards in the Sierras.

There are elevated tracts of country of large extent among the Sierras, far above the present limits of our introduced fruits, where the common wild plum, of a very fair flavor, the choke cherry, wild gooseberry and California chestnut are produced in great abundance; and from recent examination, the present season will not be an exception, notwithstanding the April frosts killed the fruit of these same plums that had been transplanted to lower gar-

dens, those growing in their natural positions were entirely uninjured.

It will be noticed, however, that these plum trees, with other fruits and nuts in their natural positions, occupy invariably the broad tops of the great ridges, instead of the sides and bottoms of the ravines or the narrow pent-up valleys. Thus it would seem, that were we to follow nature to some extent, in the choice of our orchard grounds, with a due regard to a supply of moisture in the soil, either naturally or by artificial means, we may yet find that no more hazard attends the culture of the ordinary fruits of our latitude, among the highlands and mountains of our State, than is incident to many other apparently far more favorable localities.

The Drying North Wind.

This California sirocco, so blighting and destructive to vegetation throughout the length and breadth of the great valleys, and the smaller ones adjacent, occurring at intervals during the spring, summer and autumn months, are never felt in these higher altitudes, particularly of the Sierra Nevada.

The almost boundless forests of those mountains are a perfect barrier to the progress, and consequently to the drying effects of these baneful and always unwelcome visitants.

It is on this account that several of the smaller fruits, as currants and raspberries, have shown, after five years of acclimation and trial, to be better adapted to these mountain plateaus than to the more dry and parched valleys and climate of the lower country. Probably no part of California is so perfectly the home of the more hardy and late keeping fruits, as the apple and pear, as are these same elevated plateaus; and there are intermediate districts between the high and low country, as at Coloma, Placerville and vicinity, that can, and always have, beat the world in peaches, plums and other of the more delicate fruits.

The Objections to Highlands.

If we except the districts immediately adjacent to the line of railroads that traverse the mountains, the greatest objection that can be urged against these lands for fruit growing purposes, is their remoteness from markets, which will always preclude the possibility of their being made available for the growing of the quickly perishable small fruits, except for purposes of drying or canning.

Then again the inhabitants of these mountain homes, must either abandon them for the whole winter season and descend to the milder valleys below, or remain isolated and shut out from society and the world by the overwhelming snows. Our mountain homes—for there will be many—will be among the lovely and beautiful of earth during the summer and autumn months, but dreary and desolate in their surroundings during winter.

Adaptation of the Great Valleys.

Take the entire length of the State and we hear of frosts and its effects, all along the borders of the great valleys on both sides; the Coast Range as well as the Sierra Nevada. Facts, however, which have been brought to our knowledge, make it equally certain that there is a broad belt of country lying between the base of the foothills and the great rivers Sacramento and San Joaquin that have entirely escaped the damaging frosts of other districts.

One of these exempt districts is found on the great plains lying to the south and east of Sacramento, between that city and Stockton, much of which is of that peculiar description of soil designated as the "red lands," that color predominating in the soil; the cause unquestionably being the presence of the oxide of iron in largely appreciative quantities, a fact that not only stamps it as one of the best known soils for the production of the choicest wine grapes, but also for the widest range of the finer tree fruits, including the orange, lime and lemon.

The silver beet is being raised in Canada as a crop for plowing under as manure; it produces a mass of leaves thirty inches high, which furnish a large quantity of green manure.

THE Fair of the Mechanics and Agricultural Fair Association of Louisiana is to be held in New Orleans, April 24-30. Exhibitors are invited from every State; \$20,000 are offered in premiums.

THE ADRIATIC, the latest addition to the White Star line of steamers between New York and Liverpool, is to be lighted with gas made on board.

Shipping Wheat in Bulk.

There is an exceedingly onerous tax upon the grain growers of this State, which is not felt by their more favored co-laborers of the Atlantic States, and which annually eats largely into the profits of the California producer. We allude of course to the use and cost of sacks, to be given away with the sale of the grain. A farmer in the Atlantic States would no more think of giving away the sacks in which he delivers his grain, than he would his wagon that carries both sacks and grain to the market; and there is no more reason for his doing it.

There should be erected along the lines of the railways, and at all interior shipping ports, contiguous to grain producing districts, convenient repositories for the storing of the grain in the country in bulk, and where farmers can deliver it by the wagon load, retaining their sacks. Cars and water transports should receive the same and again deliver it in bulk at different grain-loading elevator stations; and here again, ships should receive it once more in bulk, as is done at all the ports of the Atlantic, for shipment to foreign countries.

It is idle talk, to say that grain cannot be shipped from California in bulk. It has been done successfully, and can be again, and the sooner a united and determined effort is made by our farmers, to provide a remedy and utterly throw off this sack-parasite that annually fastens with such expensive effect upon their purses, the better it will be for them.

A unity of action is required, and we know of no better way to bring it about, than to have a conference of the different Farmers' Clubs throughout the State as proposed by the Contra Costa Club, in this number of the RURAL, and unite upon some effort or action, either to break up or act independently of the sack "ring," that would control the market and exact their own prices.

Thinning Fruit.

There is a very general tendency of fruit trees in California to set more fruit than they can bring to good size and full maturity. It is the large peach, plum or pear of the same variety upon the same tree, that is better than the half grown one. In order to remedy the evil, incident to this propensity to over-bear, recourse must be had to thinning. And the only way the cultivator can effect his object properly, is by hand picking the small and imperfect fruit, leaving only the best to be carried forward to maturity.

It is worse than useless to attempt the thinning process by shaking the limbs, for the effect is to cause the largest and heaviest fruit to fall rather than the small and lightest, and it should be remembered that three bushels of fine large fruit, will bring more money than four of inferior, though from the same tree; while the handling and freight are as three to four in favor of the best.

PREPARATION OF BEET LEAVES FOR FODDER.—M'Chay maintains the entire success of his method of so preparing the leaves of the beet as to rendering them capable of preservation for several months as fodder; and at the same time greatly improve their qualities as food for cattle. The method consists simply in placing them in baskets, and immersing them in a tank containing diluted hydrochloric acid of 4 degrees of Baumé. The result of this is to greatly condense the volume of the leaves and to render it necessary to add more fresh ones to fill up the basket, which has to be again immersed, and finally allowed to drain off. The leaves may then be placed in beds, in dry earth, and kept until needed for use. According to a report of a committee who examined the results of this process, domestic animals become extremely fond of the leaves thus prepared; and, indeed, milk cows fed with them are said to give a large increase of milk, with a decided improvement in the quality of the butter. The tendency to diarrhea in cattle produced by the fresh beet leaves seems not to be developed by this prepared fodder, and for this and many other reasons it is strongly recommended to agriculturists.

ACKNOWLEDGMENT.—Hon. Cornelius Cole has our thanks for Congressional publications, including the Report of the Commissioner of Agriculture for the year 1870, and the monthly reports for March and April of 1872.

ON FILE.—Letter from "Requa," "A Voice from the Country;"—next week.

The Future of the Pacific Coast.

When Sir Isaac Newton, the greatest of modern philosophers, lay at the point of death, his friends, assembled at his bedside, were grieving at the loss the world would sustain by the death of so great a man; the dying philosopher, observing their emotion, and comprehending the cause uttered these memorable words: "Weep not for me my friends, I am but as a mere child upon the sea shore picking up pebbles, compared to what those who come after me will be able to accomplish. I am but at the doorstep of knowledge." And thus it is ever. Compared to the possibilities of those who succeed us we are but mere children upon the seashore picking up pebbles. We are only at the doorstep of knowledge, intelligence and power. Those who came to California early were, it is true, blessed with opportunities of a high order, but, compared to those who came after them, and those who will come in the future, they were but as children upon the seashore picking up pebbles—at the doorstep of intelligence and power.

The Wealth of the Future.

Let us estimate the aggregate of the wealth of the inhabitants of the Pacific Coast in 1860; what was it as compared with the aggregate of the wealth of the inhabitants of this coast in 1870? Look at the increase of wealth of San Francisco, alone, in those two years. Contemplate the vast area of streets that has been opened and the multitude of solid, substantial buildings that have been erected in those ten years; and behold it, to-day, in spite of the financial depression that we have recently experienced, occasioned principally by the great drought from which our mining and agricultural regions have suffered. Contemplate, too, the great increase in all the elements of wealth to be found in the numerous cities, towns and villages, that have sprung into existence on this coast in the past twenty years; the railroads, canals, tunnels, etc., that have been constructed in the past few years, and think what the next twenty years will do for us, with the vast lines of railroads that are already built, or in course of construction, and in contemplation. Who is he that has prescience enough to estimate what will be the aggregate of wealth of the Pacific Coast in the year 1900, when the Central Pacific and the Northern and Southern Pacific railroads shall have developed the hundreds of now barren wastes, that will then be noisy with the active millions of people that will then populate the vast cities, towns and villages that will meanwhile spring into existence all around them?

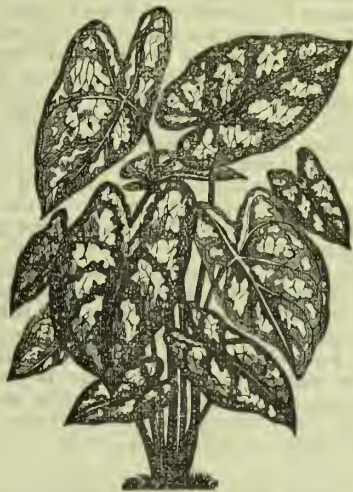
The Improvements of the Future.

Independently of these, who can estimate the value of the millions of acres of now unproductive lands that shall be opened up to our farmers by the immense net work of railroads and canals which shall be constructed in all parts of our State by that time? Think of the vast benefits which our miners and agriculturists will realize from the completion of the numerous works now latent in the minds of some modern DeWitt Clintons. The numerous projects such as Lake Tahoe; the irrigation canals, that will make our adobe lands prolific, in spite of droughts; the millions of tule lands that in a few years will be reclaimed and yield never failing and abundant harvests. Think of the vast mines of wealth that will flow into the coffers of our manufacturers when the thousand and one industries that now are unthought of on our coast are in active operation, and that shall check the mighty export of our precious metals to procure their supply from other parts of the civilized world. Think of the immense lines of steamships that shall bring the commerce of China, Japan,

and the islands of the Pacific, and even India, to our doors. The barriers of prejudice and ignorance are rapidly falling before the silent but overwhelming approaches of commerce and civilization.

The Men of the Future.

All that we need is men, not mere humans, dwarfed by prejudice and ignorance, but men who have large brains and comprehensive intellects to grapple with the mighty problems now waiting to be solved. Not men like the Chinese, who will build a great wall to keep out civilization, and the arts and sciences, and allow the surrounding natives to progress while they are dormant and slothful. Men who will not allow their "lights to be hid under a bushel," but will "let them shine before men." Men whose reputation for intelligence, industry and integrity shall be known to the furthest confines of the earth; men who while they have intelligence to conduct gigantic enterprises and manufacture goods that shall flood the markets of neighboring countries, shall realize the value of the printing press in heralding their achievements to the uttermost parts of the earth. Men who shall appreciate the advantages of enterprises like ours and aid them, and avail themselves of its benefits, and make the manufactures of the Pacific Coast what the



CALADIUM ARGYRITES.

manufactures of Birmingham, Sheffield, Manchester, London, Liverpool, Paris, Antwerp, New York, Boston, Pittsburgh, etc., have done for theirs. All it wants is men like these. Shall we have them?

Caladium Argyrites.

If we present our lady readers with an illustration quite modest in size this week, it will not lessen one iota, the celebrity which this beautiful plant has everywhere attained when introduced. E. E. Moore, of 425 Washington street, has a superb collection of Caladiums of all possible colors. The wonderful markings of this beautiful tribe of plants, must be seen to be correctly appreciated; and it is not saying too much, when we assert that they assume almost every imaginable color in the variegation of spotting, veining and marbling of their leaves.

Our cut represents one of the smallest in its habit of growth, a beautiful white spotted variety, known as *Argyrites*.

SETTLERS' MEETING IN KERN COUNTY.—A meeting of farmers and stockmen was held at Bakersfield on the 4th inst. to act on the report of a committee appointed at a previous meeting to perfect a plan of organization for mutual protection against the trespassing herds of non-resident stock-owners. It appears that the resident stock-owners are agreed with the citizens generally on the necessity of preventing the trespassing of animals on private property and the protection of the growing crops. It was finally

Resolved, That notice shall be given by all farmers and settlers on Kern Island declaring their intention to prevent the trespassing of stock on the farms on the Island, and requesting the removal of all stock from the vicinity of their crops before the first day of June next, and that they will freely join with all resident stock-owners in the mutual protection of property, and use all diligence to protect them in their rights.

California Fossils.

It was never a matter of surprise to us, that the bones of some of the larger animals, even of long extinct species, should be found in the depths of reclaimed marshes; or, in and around the miry salt-licks of any country; for it would be natural that such animals should occasionally mire down, and in the deep soft slough find their long resting place. But, when we find similar remains, deeply buried, as in California, hundreds of feet beneath mountains of earth and rocks, and in positions that make it clear that nothing but mighty convulsions of the earth's surface, or the overwhelming of volcanic eruptions could have placed them there; or, find the remains of ocean shellfish, and even the bones of the whale lifted high upon the mountain's side, as at Livermore Pass, calling for new theories and reasonings to account for their position and remarkable preservation, it gives to the study of her natural history an interest, and novelty exceeded by no other land.

Curious Freak of Nature.

The accompanying drawing represents a Radish curiosity, (size of the sketch,) grown in the garden of T. Hart Hyatt, Oakland, the present



A FREAK OF NATURE.

season. The two radishes tied themselves together, as shown, without aid. Whether it is a matrimonial knot, or not matrimonial, we cannot say.

Diseases of the Horse.

Absorption of the Coffin Bone.

EDITORS PACIFIC RURAL PRESS:—It is with pleasure that I comply with your request, to write a few communications for your excellent paper, upon the prevention of disease and unsoundness in horses; and you have my consent, (as you desire) to publish my name in connection therewith.

I do not propose to write a work on veterinary surgery, as there are many veterinary works now published from abler pens than mine; yet, I hope to show horse owners how to avoid the necessity of the services of the veterinary surgeon in some diseases so often as they are now called for.

The first that will be noticed is the ruinous custom of clipping the feet in shoeing. The old veterinary writers have nothing to say on this subject, probably from the fact that this bad custom did not exist in their day. It is a modern invention, and the sooner it is abandoned the better. To Dr. Jennings, the President of the Veterinary College of Philadelphia, belongs the credit of discovering the ruin caused to horses feet by clipping; he is also the first discoverer of worms in the circulation of

the blood of the horse, and their formation, etc., which I may hereafter notice—if time permits. In 1861, I was at the infirmary of Dr. J., and was much interested in noticing (among other anatomical specimens), a large lot of coffin-bones, collected by the Doctor's industry from horses that had been clipped in shoeing. In nearly every case, there was a notch, absorbed from the toe, and side of the bone, corresponding precisely with the notch cut in the toe, or side of the hoof to receive the clip. The Doctor informed me that the horses had all been lamed thereby, and, the degree of lameness, corresponded very closely with the progress in the destruction of the coffin-bone.

It is more than doubtful about there being any medical remedy for this destruction of the bone; an ounce of prevention in this case, is worth many pounds of cure, and all who have horses, will act more wisely in the matter; to stop where they are, than to go further, and fare worse. It is no proof that clipping does not cause destruction of the coffin-bone and lameness; because all horses are not immediately lamed thereby. I have often heard gentlemen and ladies complaining of corns, and as often recommended them to remove the pressure that caused the corns, by wearing boots and shoes that were not large enough for the foot; but none ever acknowledge that their feet were too large for their boots. O, no. They had worn that size and a half number smaller, for years, and never had corns before; but, nature will sooner or later surely punish the transgressor of her laws.

I see many valuable horses limping about town with no other visible cause of lameness, but the clips, sunk deep into the toes and sides of their feet. It is true, there are many not yet lamed by that cause; but there is great danger if the pernicious practice is continued. The clips should be taken off, and the shoe should be made large enough for the foot, so that the nails can be driven in the solid wall of the hoof far enough from the lamella surrounding the bony structure to prevent crowding it, if you would not have lame horses. Whenever you cause any unnatural crowding upon the lamella of the foot; it, in turn, crowds upon the bony structure, and the irritation caused thereby, arouses the absorbents to action upon the bone thus crowded; hence, the destruction of the bone.

I know of no medical remedy for this complaint, yet if the cause is removed, nature will probably secrete new bone to supply the place of that which has been destroyed. Such is the case in the human subject, in necrosis. If the dead portion of the bone is removed by the surgeon, nature soon supplies the vacancy, where the joints are uninjured; and in this case, the clips seldom extend as far back as the navicular joint; hence, the toe and sides of the coffin-bone is the only part likely to suffer. Next in order, will be "Founder," its causes and prevention.

S. PELTON.
San Francisco, May 12, 1872.

Oakland Farming, H. and I. Club—Meeting, May 17th.

This Association holds its third meeting on Friday evening, May 17th, at the University lecture room, corner of Franklin and Twelfth Sts. The members are to have "a free talk" about irrigation, on the following points: How much to irrigate; what to irrigate; when to irrigate; when not to irrigate; the best and most economical method of irrigating; the good and evil effects of irrigating. This is a seasonable subject, and several interesting practical speakers are prepared to treat it in a conversational way, answering such queries as may arise. This meeting is intended to be particularly a social one, and all ladies and gentlemen favorably inclined towards such an organization, are cordially invited to be present.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING APRIL 23D, 1872.
NOZZLE.—Randolph R. Craig and Joseph Craig, Nevada City, Cal.; antedated April 13, 1872.
PHOTOGRAPHIC CAMERA.—Hector W. Vaughn, San Francisco, Cal.
CLASP FOR SIDE-ARMS.—Frederick A. Will and Julius Finck, San Francisco, Cal.
TOOL HANDLE.—Frederick A. Will and Julius Finck, San Francisco, Cal.; antedated April 13, 1872.
CAR-TRUCK.—Samuel N. Norton, Sacramento, Cal.
ORE-CRUSHER.—James W. Cummings, Georgetown, Col. Ter.; antedated April 10, 1872.
SOLDERING-TOOL.—Louis McMurray and Robert J. Hollingsworth, Baltimore, Md.; said Hollingsworth assigns his right to Francis Cutting, San Francisco, Cal.
COMBINED KEY-HOLE GUARD AND BOLT-FASTENER FOR LOCKS.—Charles H. Townsend and Abiath F. Potter, Oakland, Cal.



At the Garden Gate.

Who's that tapping at the garden gate,
Tap, tap, tapping at the garden gate?
Every night I have heard of late,
Somebody tapping at the garden gate.
What! you sly puss; don't know?
Why do you blush and falter so?
What are you looking for under the chair?
The tap, tap, tapping comes not from there.
Every night about half-past eight,
There is tap, tap, tapping at the garden gate.

Oh, you sly little fox, you know,
Fidgeting about until you go.
Dropped the sugar spoon? Why there it lies;
Bless the girl, where are her eyes?
Were I able to leave my chair,
Soon would I find out who is there.
Don't tell me you think it's the cat:
Cats don't tap, tap, tap like that.
Cats don't know when its half-past eight,
And comes tap, tapping at the garden gate.

The Naming of a Lakelet.

(Written for the RURAL PRESS by W. WADSWORTH.)

If the question you should ask me,
Why I blacken this white paper,
Black with many words and letters?
I would answer, 'tis to tell you
Of the naming of a lakelet,—
Lakelet of the high Sierras,
And of scenes upon its borders;
The history of Pioneers,
Of starving, dying Pioneers;
Their dreamings and delirium,
Of the snow, and storm and tempest
Of a winter in the mountains
On the shores of Donner lakelet.
It was there, and during winter,
Cold and cheerless, cruel winter,
That an immigrating party,
Or the remnant of a party,
Faint from hunger, weak from fever,
Cold and chilled by drenching rain-storm,
Blinded by the sleet and hail-storm,
Path-bound by the drifting snow-storm,
Threw together logs of pine-trees,
Roofed them o'er with boughs of fir-trees,
Made a fire within of dried limbs
Broken from the standing dead trees,
With their chilled and frosted fingers,
Mittenless and bleeding fingers,
Though slowly perishing of hunger,
Kept the warmth o' life within them.
Nor bread, nor bird, nor beast for food,
Nor water-fowl, not even fishes,
For the lake was frozen over.
Every day they sought for token,
Token of some moving, live thing;
Trace of bird among the spruce-trees;
Or upon the spotless snow-fields
Track of rabbit, deer or grizzly.
Every night for token listened,
As the snows were deepening o'er them;
Every night a hopeful sound came,
Of the tramp of men and horses,
Came in echoes from the mountains.
Every morning vainly sought they
For some token of the tramping;
But the smooth and trackless snow-fields
Turned the hope of tramp and echo
Into dream-land emanations—
'Twas the howling of the tempest,
Tramp and echo of the storm-king!
Thrice a day they forced a passage
From their buried cabin, outward,
Ever listening, hoping, peering,
For the sight of living creature;
But they only saw around them
Snow-clad pines and giant mountains,
Like ghosts of famine staring at them!
Their only food, the bark of green trees,
The soft and inner bark of green trees,
And the yellow moss of dead trees.
Thus they lived or rather lingered,
Day by day and all the night-time,
Wasting with a burning fever,
Perishing from cold and hunger,
When death's Angel called upon them!
Looking in, he found them dying,
Dying by the shortest inches;
Spoke one cheering word of Heaven,
Touched them with his icy fingers,
And they knew no more of hunger!
All but one, and he, poor creature,
Crazed with anguish, mind bewildered,
Living, yet by piece-meal dying;
But with strength enough for standing,
As the life of each departed—
First the husband and the father,
After him the wife and mother,
Closed their eyes,—'twas all he could do
As a kindly act towards them;
As fitting them for sepulcher;
Drew their bodies to the door-way,
Through the arched and snow-lined passage,
There, as sexton, friend and mourner
Gave them to the storm and tempest,
The snow their only winding-sheet;
The snow their only sepulcher.
From the effort, faint and weary,
To his cabin now returned he,

All alone and very lonely;
Not a moving thing around him,
But the coming and the going
Of the fire-light and its shadows.
Day by day and all the night-time,
A fire from broken dried limbs kept he,
Kept them piled up in his cabin,
Limbs from dead and dying pine-trees!
Day and night, with strength declining,
Lived he on, he knew not how long,
Kept no record, day or night-time.

Cold had been the day and dreary,
And the night was coming colder,
When, with wasted form and weary,
Weary from a fruitless effort,
Made to gather limbs of dried trees,
Or the inner bark of green trees,
Or the yellow moss of dead trees;
As he neared the snow-lined passage,
Leading to his cabin door-way,
A fiend of famine, met him half way,
Took him by the hand and led him,
Led him near the open pass-way;
Pointing with his bony finger
To the snow-drift, smooth and rounded,
Shrieked, as only fiend can shriek out,

"Behold the double sepulcher!
Unsnow the frozen forms within,
And see in them, the only lease
Of life thou hast for forty days!"

Saying this, the fiend departed,
Going unseen, like his coming,
Nowise strangely, only ghost-like.

Returning to his cabin lonely,
Weak and trembling, faceward fell he;
And then he prayed—we hope he prayed
To the God of earth and heaven,
That the wrong might be forgiven,
If, in the weakness of his nature,
Weakness of his human nature
And the cravings of his hunger,
He should yield to dire temptation
The desecration of the sepulcher!

Alas! that neither hope of succor,
Nor the strength of resolution
Or the will's determination,
Nor the fervent prayer to heaven,
Were proof against the fearful yearnings,
Yearnings of his human nature
And his famished, starving body.

Forty days and nights we'll leave him
In his damp and murky cabin,
And o'er all his works by day-time
And the horrors of the night-time;
Over all his acts and doings
Spread the mantle of our charity.

Forty days! an age of ages,
To this lone and furnished creature
Had been numbered with the past days;
But their numbering was the ending
Of the tragic scenes at Donner;
For the succor so long hoped for,
Now by patient toil had reached there,
And in his dismal cabin found him,—
By his chimney's smoke they found him,
His chimney and his door-way one
A cavity with sooty snow-walls,
Sooty from the smoke of pine boughs.

But the horror of the finding!
There, within his hut of pine logs,
Sat he with his hair disheveled,
Glaring eyeballs and distended,
Ghastly, ghoul-like, keeping vigils
O'er a boiling, human flesh-pot!
Horrible the scene, and sickening!

But this, like other scenes, had ending;
The paling winter and the sunshine
Had bared one little spot of woodbine;
Here they found the earth unfrozen,
Here the fleshless bones and whitened
In a single grave were blended.
Now, although no lettered tablet,
Tells the story of the Donners,
Yet the naming of the lakelet
Keeps alive their name for ages;
Whilst the gentle breeze of summer,
And the voice of storms in winter,
And the moaning of the fir-trees
And the sighing of the pine-trees
Sing their requiem forever.

Addison's Recipe for a Happy Life.

Irresolution on the schemes of life
which offer themselves to our choice, and
inconstancy in pursuing them, are the
greatest and most universal causes of all
our disquiet and unhappiness. When
ambition pulls one way, interest another,
inclination a third, and perhaps reason
contrary to all, a man is likely to pass his
time but ill who has so many different
parties to please. When the mind hovers
among such a variety of allurements, one
had better settle on a way of life that is
not the very best we might have chosen,
than grow old without determining our
choice, and go out of the world, as the
greatest part of mankind do, before we
have resolved how to live in it. There is
but one method of setting ourselves at
rest in this particular, and that is by ad-
hering steadfastly to one great end, as the
chief and ultimate aim of all our pursuits.
If we are firmly resolved to live up to the
dictates of reason, without any regard to
wealth, reputation, or the like considera-
tions, any more than as they fall in with
our principal design, we may go through
life with steadiness and pleasure; but if
we act by several broken views, and will
not only be virtuous, but wealthy, popu-
lar, and everything that has a value set
upon it by the world, we shall live and
die in misery and repentance.

A Sphere for Women.

Women are naturally good economists,
says the *Congregationalist*. They are apt
at understanding how to make limited
means go as far as possible. If a man and
his wife are united in the desire to get
rich, the man is likely to think more about
earning money, the wife will attach more
importance to saving it.

Almost every American earns money
enough to be well off, and in time to be
rich. If he does not become so, it is, in
many cases, because he has no wife, or be-
cause he does not take her into his coun-
sels. He is full of enterprise and makes
an income, and if he does not prosper it
is because he does not hold on to it. His
wife, very likely, has the faculty of con-
versation which he lacks; and if he has
the shrewdness to enlist her in his plans,
he may find his fortune made.

In Continental Europe book-keeping is
a part of the education of a well-taught
farmer's daughter, and the wife presides
over the finances of the establishment. With
us, woman's aptitude in the promotion of
material prosperity is too little thought of;
and a woman, who, as a girl, was untaught
in respect to judicious economy, makes an
expensive wife. Her husband, perhaps,
keeps her in ignorance of his finances,
purposely. If he is prosperous, she be-
comes accustomed to plenty of money, and
ill-prepared for reverses. If he is not
prosperous, she has to bear the pinchings
of poverty without knowing how to help
him avoid the pressure.

Marriage would be easier and happier,
if young women were taught the principles
of account-keeping, and systematic habits
in respect to finances, and if the young hus-
band would take his wife into his confi-
dence, and make the income and outgo,
and the accumulation of the first few
thousands of dollars, a matter of common
interest. An American girl of average in-
telligence and good sense can make the
fortune of a man whose love she enjoys, and
who will give her for the purpose a full
share in the responsible control of the in-
come of the household. She will not gen-
erally be able to enter into his business
plans, but if she knows his wages, salary
or current profits, and his personal expen-
ses, and can thus foresee what the house-
hold has to rely on, she will characteristi-
cally be ready "to cut the coat according
to the cloth", and will usually be more
scrupulous than he, to lay aside some-
thing every season as the beginning of
their fortune.—*Woman's Journal*.

A HEROIC BOY.—The *Swiss Times* tells a
very nice story of a shepherd lad, fourteen
years of age, in the Canton Grisons. On
the Monte di Campo the youthful shep-
herd fed his flock, when a huge bear made
his appearance and unceremoniously began
to feed himself on the same flock. When
he had seized one of the finest sheep the
courageous boy began to beat him about
the head with a stick, in order to drive him
away. The infuriated beast turned upon
his slender assailant, determined to finish
his mutton on him. The youth turned
and ran, and remembering that there was
not far off a gorge nearly two hundred feet
deep, but so narrow that he might clear it
by a vigorous leap, started for it, with
bruin close at his heels. He reached the
edge of the ravine, and, by a very desper-
ate bound, landed safely on the other side,
while the stupid brute behind him, not
noticing his danger stumbled headlong to
the bottom. The boy, descending the
gorge, found his enemy disabled by the
bruises, and soon dispatched him by beat-
ing out his brains with stones.—*Little
Chief*.

LADIES who cultivate flowers in the
house will find great benefit to the plants
by spreading moss over the earth in flower
pots. This keeps the water from evaporat-
ing, and temperature more uniform. Tea-
grounds are often used for the same pur-
pose. Where a flower-pot sets in a saucer,
with a hole in the bottom of the pot, put a
little sand in the saucer, and cover it with
moss, and you have a simple and admir-
able arrangement.

THE Massachusetts Senate has adopted
an "order" directing its Committee on
Railroads to inquire into the expediency
of providing by law that passengers in rail-
way cars shall not be obliged to pay fare
until they are provided with seats.

IN what way does a lady treat a man like
a telescope? When she pulls him out,
looks him through, and then shuts him up.

MOCK TURTLE.—Kissing before company and
fighting afterwards.

Young Folks' Column.

A Dollar in the Shoe.

A teacher and his pupil, a rich lad, were
walking out together one day in the coun-
try. As they walked along they saw a pair
of old shoes lying in the grass, belonging
to a poor man who was at work in a field
far off, and who had almost finished his
day's work.

"Now let us have a bit of sport," said
the boy. "Suppose we hide this old man's
shoes, and then hide ourselves, and see
what he will do when he comes and can't
find his shoes."

"Oh, no," said the teacher, "we should
never amuse ourselves by giving pain to
others, and especially to the poor. I will
tell you how you can give yourself much
greater pleasure by means of this old man.
Put a silver dollar in each of his shoes,
for you can well afford it, and then we will
hide ourselves and see what he says when
he finds them."

The boy willingly did so, and they both
hid themselves behind some bushes, where
they could easily watch the old man, and
see his surprise and joy when he found the
money.

It was not long before he finished his
work and came across the field to the spot
where he left his coat and shoes. While
he was putting on his coat he slipped his
foot into one of his shoes, when, feeling
something hard in it, he stooped down
and found a dollar. Could anything equal
his surprise? He turned it round and
round and looked at it again and again.
Then he looked all around, as if to see
where it came from; but he could see no
one. He slipped the money into his pocket,
and began to put on his other shoe. How
great was his astonishment when he found
the other dollar. This was more than he
could stand. His feelings quite overcame
him. He looked up to heaven and poured
out aloud his thanksgiving to God. Tears
rolled down his cheeks as he spoke of his
sick wife and helpless children, who would
be saved from much suffering by this un-
expected gift.

The boy could not help shedding tears
as he saw and heard all this, and as they
went on their way thanked his teacher
again and again for the good and precious
lesson which he had taught him. I am
sure it is one which he never forgot.

The Rabbit in the Moon.—A Fable.

The heathen think that the figure we
see in the moon is a rabbit pounding rice,
and this story tells how he came there. A
fox, a monkey, and a rabbit once lived to-
gether in a forest, very happily in one
dwelling. One day, an old man, toil-
worn, weary and hungry came to their
home, where they gladly welcomed him.
After a little while he said to them:

"My children, in my home a great
ways from here, I heard that you, al-
though from different families lived very
happily together; so I have come to see if
this was true. I am tired and hungry.
Have you nothing that you can get to re-
fresh me?"

They all exclaimed, "We will try."
They went in different directions to see
what they could find for the old man's
supper. The fox went to the river and
caught a fish; the monkey climbed a tree
and brought the finest coconuts, but the
little rabbit returned without anything.
The old man said to the rabbit:

"My child, I am very sorry that while
your friends can each do something for
the old and weary, you do not care to do
anything."

The little rabbit looked very sad, and
turning to his companions asked them to
help him gather some sticks and dried
leaves to make a fire. When this was
done, he turned to the old man and said:

"Kind sir, I am a poor, feeble animal,
who cannot fish like the fox, or climb trees
like the monkey. After looking every-
where, I could find nothing worthy of
your acceptance, but to show you that I
am willing to do something for you, I will
give myself."

With that he threw himself into the
fire, and was roasted for the old man's
supper. The old man was one of their
gods in disguise, and to commemorate the
self-devotion of the rabbit, he placed him
in the moon, where he should never be
forgotten. The next time you see the full
moon, I want you to look at it, and see if
you can fancy that the dark figure in it
looks like a rabbit standing up on its hind
legs, with a stick in its fore paw, pound-
ing rice in a wooden bowl.

DOMESTIC ECONOMY.

COOKING EGGS.—It is understood that eggs are more easily digested if "rare" than "well done," but which portion of the egg resists digestion—the "White," which is nearly pure albumen, or the yolk? Lately, experiments have been made in this direction, with ample opportunity of demonstrating that healthy gastric juice, which the stomach secretes for purposes of digestion, will not act readily on firmly coagulated white of egg, even if cut in pieces not larger than ordinary peas (that is as fine as people usually chew their food!) while it acts with facility upon the more brittle yolk. The reason is that the coagulated albumen is very compact and tenacious, and would need to be "ground to powder" to accept the chemical affinities of the gastric juice. Pour into a basin boiling water sufficient to cover the eggs, put the eggs into the water and let them remain eight or ten minutes, according to circumstances and your own taste; keep the water nearly up to boiling temperature, but don't boil the eggs. Old eggs will cook more quickly than fresh ones, and of course small ones quicker than large ones. By this process you will find the yolks well cooked, while the white is left in a condition to digest readily.—*Ec.*

STRAWBERRY SYRUP.—Take two pounds of nice ripe field berries, all the green ones being carefully picked out, and put them without smashing into a large bottle with a wide mouth, and at the same time $2\frac{1}{2}$ pounds of finely pulverized white sugar. The bottle should not be quite full. They are left standing a few days at the ordinary temperature, being occasionally gently shaken up. The sugar takes up the liquid part of the berry, forming a clear, aromatic syrup, while the solid parts shrivel up almost odorless and tasteless, and may be easily separated from the juice by straining through a linen cloth. Milk or wine may be poured over the residue to make a palatable dish for the table. The above quantity of berries and sugar make $1\frac{1}{4}$ quarts of syrup. It may be kept for some time in closely stopped bottles in a cool place. It must not be heated, because the flavor of the berry is very volatile; a long exposure of the juice to the air is also injurious. The syrup diluted with water makes an agreeable ice; or it may be mixed with some light wine as a drink. Raspberry syrup may be prepared in the same way. The flavor of the raspberry is not injured by heat, and the syrup may be more quickly prepared and with less sugar by placing the bottle a short time in boiling water. This syrup may also be used for ices. As a drink, when diluted with water, it is less piquant than that made in the usual way by crushing the berries and letting the juice stand for a week.

WORKINGMEN'S DINNERS.—The series of cheap, palatable workingmen's dinners lately inaugurated in London, have proved a great success. The repast consists of oxtail, mulligatawny, pea and gravy soups made of Australian preserved meats; also legs of mutton, beef, vegetables, celery, etc. The hearty manner in which the meals are disposed of daily shows that the dinners are appreciated, and that the preserved meats are as agreeable as they are nutritious. The prices at which the dishes are served are extremely low, as will be seen from the following extract from the daily bill of fare: "Gravy soup, 1d. per plate; Irish stew, 2d.; stewed beef, 3d. The cheapness of the preserved meats enables those by whom the dinners were originated to more than pay expenses at the low prices charged. The best kind of benevolence is that which enables the poor to provide themselves with comforts, and if those who are desirous of doing good would try the experiment of cheap dinners in this country, we think they would find the results gratifying.

HOW TO MIX MUSTARD.—Mustard should be mixed with water that has been boiled and allowed to cool; hot water destroys its essential properties, and raw, cold water might cause it to ferment. Put the mustard in a cup, with a small pinch of salt, and mix with it very gradually sufficient boiled water to make it drop from the spoon without being watery. Stir and mix well, and rub the lumps well down with the back of a spoon, as mustard properly mixed should be perfectly free from these. The mustard pot should not be more than half full, or rather less, if it will not be used for a day or two, as the mustard is so much better when fresh made.

TO DETECT THE ADULTERATION OF WINES.—The adulteration of wines with cider can easily be detected by filtering and adding ammonia in excess. The apple juice will immediately deposit crystals on the side of the test tube. Genuine wine sheds a pulverulent deposit which does not adhere to the glass, and is devoid of a crystalline structure. Acetic acid will dissolve either of these precipitates. The deposit from the cider consists of flat crystals with parallel sides; that from wine shows star-shaped formations. The treatment with acetic acid shows the presence of lime and phosphoric acid in both cases, the quantity of lime in the wine being minute.

LEMON SYRUP.—When lemons are abundant and cheap, it is a good plan to purchase several dozen at once, and prepare them for use in the warm, weak days of spring and summer, when acids, especially citric and malic, or the acids of lemons and ripe fruits, are so grateful and so useful.

Press your hand upon the lemon and roll it back and forth briskly on the table to make it squeeze more easily, then press the juice into a bowl or tumbler, never into tin; strain out all the seeds as they give a bad taste. Remove all the pulp from the peel and boil in water, a pint for a dozen pulps, to extract the acid. A few minutes boiling is enough, then strain the water with the juice of the lemons, put a pound of white sugar to a pint of the juice; boil ten minutes, bottle it, and your lemonade is ready. Put a tablespoonful or two of this lemon syrup in a glass of water, and you have a cooling, healthful drink.

CARBOLIC TOILET WATER.—Crystallized carbolic acid, 10 parts; essence of mille-fleurs, 1 part; tincture of quillaya saponaria, 50 parts; water, 1,000 parts. Mix. The saponine replaces soap with advantage. The above should be employed, diluted with ten times its bulk of water, for disinfecting the skin, for washing the hands after any risk of contagion, etc.

The tincture of saponine in the above is made by taking of bark of quillaya saponaria, 1 part, and of alcohol (90°), 4 parts. Heat to ebullition, and filter.

CRACKED WHEAT.—Immediately after breakfast put a kettle of water to boil, with a steamer above, placing therein a two-quart tin vessel half full of cracked wheat, a tablespoonful of salt, and water enough to cover. Allow it to steam all day (with less time it tastes raw) add hot water occasionally, just enough to keep the cracked wheat covered; it will swell double. Allow it to stand till cold, then turn it on a plate; serve at any meal, with cream and sugar. For the sake of hygiene I have, at every meal, cracked wheat, Graham, oatmeal or samp.—*Mono, Titusville, Pa.*

HOW TO COOK BEETS.—Beets are very nice cooked in the following manner: Slice cooked beets quite thin, put in a sauce-pan with some vinegar, water and a piece of butter, with sugar enough to make palatable. Any rule is impossible. Taste it, and if any ingredient is lacking, add more of it; salt a very little, and pepper; thicken the whole slightly; serve hot. Beets may be skinned much easier by rubbing over with a cloth immediately in taking them from the water in which they are cooked, than by using a knife and fork.

RICE PUDDING.—Try the following receipt: Take one teacupful of soft, boiled rice, one tablespoonful of butter, mixed in the rice while hot; add one quart of sweet milk, one teacup of sugar, the yolks of five eggs, season with lemon; bake until done. Beat the whites of five eggs to a stiff froth, and stir in it five heaping tablespoonfuls of powdered sugar; spread over the custard; return to the oven, and bake a delicate brown.—*T. W. C., Augusta, Ga.*

COOKING RAISINS.—It is well to cook raisins before putting them into pies, cakes or puddings. Soaking them is not sufficient. Steaming them by pouring a small quantity of boiling water amongst them in a tightly closing dish, and allowing them plenty of time to cook before opening is a good plan. When raisins are rightly cooked before using they are plumper, and more palatable, and can be eaten without injury by most dyspeptics.

GRAHAM BREAD.—Stir into two quarts of blood-warm water enough Graham flour to make it about the consistency of pancakes; add half a pint of yeast and a tablespoonful of salt; allow it to stand all night in a warm place; early next morning add two cups of common molasses and stir in enough flour to make about as thick as for cake—not good if too thick; at ten o'clock put into deep buttered tins (about four), set in a warm place to rise; in two hours it will be light enough. Bake one hour.

ORANGE SALAD.—Peel eight oranges with a sharp knife, so as to remove every vestige of skin from them, core them as you would core apples, then cut them in slices, and lay them in a deep dish; strew over them plenty of powdered loaf-sugar, then add a large wineglassful of pale brandy; keep the dish covered close till the time of serving.

LEMON BUTTER.—One pound of white sugar, one quarter pound fresh butter, six eggs, juice and grated rind of three lemons, taking out all the seeds. Boil all together a few minutes, till thick as honey, stirring constantly; put in small jars or tumblers, covered with paper dipped in white of egg. One teaspoonful is enough for a tart or cheese-cake. This will keep a long time in a cool, dry place.

CHICKEN CHEESE.—Boil two chickens till tender, take out all the bones and chop the meat fine, season to your taste with salt, pepper, and butter; pour in enough of the liquor they were boiled in to make it moist, put into whatever mould you wish, and when cold turn out and cut into slices.

GINGER COOKIES.—Take three cups of molasses, one cup sugar, one cup hot water, one cup butter, one tablespoonful ginger, two teaspoonsful saleratus; add flour enough, and knead them so that they will roll well, and they will be found good.

Selected Receipts.

POTATO PIE-CRUST.—Boil one quart of dry, mealy potatoes. The moment they are done, mash them, and sift through a colander. Rub them evenly through two cups of graham flour in the same manner as the shortening in common pie-crust. Have ready one cup of corn-meal; pour over it one and one-third cups boiling water, stirring it till all the meal is wet, then add it to the potatoes and flour, mixing only till thoroughly incorporated together. No more flour should be added. The moulding-board should be well covered with dry flour, however, as it is slightly difficult to roll out. It should be rolled very thin, and baked in a moderate oven.

NOTE.—It is very essential that the above conditions should be complied with. Bear in mind that the potatoes must be hot, and mixed immediately with the flour; the water be poured, while boiling, upon the corn meal, and the whole mixed together very quickly, and baked immediately. Inattention to any of these requisites will be quite apt to insure a failure.

BAKED PORK AND BEANS.—Have nice white beans put in soak in cold water over night; take a piece of fat side-pork, par-boil it fifteen minutes, then place it in the pot with the beans, which ought to have been cooking an hour; boil the pork and beans together until the beans are perfectly soft, then remove them in a skimmer to the dripping pan, and make an island of the pork in the center, having first cut the rind with a sharp knife, a quarter of an inch deep, in delicate parallel lines; bake three hours in a moderate oven, and serve hot.

RICE PUDDING.—Pick over and wash a half pint of rice. Soak it over night in three pints of new milk. Put the rice and milk into an open tin pail and hang it into a kettle of boiling water and stir frequently, until the rice is nearly cooked and the whole smooth and jelly-like; add a teacup of sugar, raisins, and bake one hour or more in a moderate oven. We find this pudding is much nicer when a smaller proportion of rice is used than is commonly given in the cook books. It is less solid and more creamy in its consistence.

YANKEE BROWN BREAD.—Take equal quantities of rye and corn meal, and mix with water, making a dough that can be kneaded. Work with the hands until it loses its stickiness, and will readily cleave from the fingers. Let it stand several hours, or over night, and bake in loaves, in covered dishes, in a moderate oven, from three to five hours. Or, it may be steamed three hours, and baked one. Coarsely ground meal is better than fine for this kind of bread.

WHITE MOUNTAIN CAKE.—Four eggs, well beaten, with two cups and a half of white sugar, one heaping cup of butter, one cup of sour milk, one teaspoonful of soda, five cups of flour, one teaspoonful of vanilla, one of lemon, a heaping cup of raisins, (whole, without being stoned,) half-a-cup of almond meats, sliced. It is a delicious cake, and this amount will make two common-sized ones.

APPLE BROWN BREAD.—Work equal parts of corn and rye meal into stewed apples until the entire mass is thoroughly mixed, and bake as above. Or, thin with water to a batter, and bake on the griddle.

APPLE SWEETMEATS.—To twelve pounds of sweet apples add four pounds of sugar, one pint of vinegar. Put the vinegar and sugar together to dissolve, then put in the apples, with lemon, ginger-root and cloves.

RYE-MEAL GEMS.—Stir rye meal into water, making a batter somewhat stiffer than for the graham soft biscuit. Bake in a hot oven, in iron pans.

PRIMITIVE MEDICAL PRACTICE.—A gentleman in Alabama, in exerting himself one day, felt a sudden pain, and fearing his internal machinery had been thrown out of gear, sent for a negro on his plantation, who made some pretensions to medical skill, to prescribe for him. The negro, having investigated the case, prepared and administered a dose to his patient with the utmost confidence of a speedy cure. No relief being experienced, however, the gentleman sent for physician, who on arriving, inquired of the negro what medicine he had given his master. Bob promptly responded:

"Rosin and alum, sir."

"What did you give them for?" continued the doctor.

"Why," replied Bob, "de alum to draw the parts togadder, and the rosin to soder um."

The patient evidently recovered.—*Banner of the South.*

AMONG the Mormons business is carried on the co-operative system and in the name of the Lord. "Holiness to the Lord, with an All-seeing eye is painted on their signs, which occasioned the remark from an Irish immigrant that there were a great many eye doctors there.

The richest sugar planter in Cuba is said to be Barros, who has 6 factories and an income of \$4,000,000 per annum. Another planter, Pocy, has a plantation, called Los Soanas, two leagues from Havana, with seven hundred slaves.

Two leaders of Paris fashion recently had the temerity to appear at a ball without chignons.

FLORICULTURE.

The Flower Garden.

A beautiful garden, tastefully laid out, and well kept, is a certain evidence of taste, refinement and culture. It makes a lowly cottage attractive, and lends a charm to the stateliest palace.

An English writer, lately visiting our country, writes:

"I can conceive of nothing more dreary than to live in the country and have no garden. To have no garden is to take the poetry, and nearly all the charms away from country life. To have a garden is to have many friends continually near.

"What a difference between what Mr. Carlyle calls an 'umbrageous man's rest, in which a king might wish to sit and smoke, and call it his,' with its roses and honeysuckles, and fuchsias clambering in through the very windows in crowds, and the dreary, arid prospect around thousands of American houses!"

This hardly seems a fair criticism upon our homes. Having been an enthusiastic lover of flowers from childhood, and having cultivated them ever since the use of the hands was learned, I cannot recognize its truth;—have never known of many such houses, as he describes. Yet many American writers will declare that slender porticos, fanciful verandahs, sculptured gables, and deep bay windows are often seen in this country, without a vestige of a flower or climbing vine about them; while in England, the poorest laborer's cot is a bower of greenery; and his little plat of flowers, often vies with that of his employer.

It is not always wealth or art that gives to English homes their beauty and picturesque-ness, but it is the attention of their inmates, to the cultivation of the "*Green things of the earth.*"

It is not the latticed casement nor the high gable that attracts the notice of the traveler, but the brilliant flowers and the trailing vines that drape and embower them.

American women live in-doors too much, and thus sacrifice their health and spirits. They cultivate neuralgia, dyspepsia, and all their attendant ills—rather than the beautiful and glorious flowers which God has scattered so abundantly all over the world.

The Tulip.

This bulbous plant has been aptly styled "The Pop of Flowers," for it is the most gorgeous of all the spring flowers, and its variety of colors, most delicately blended, are almost beyond the power of imagination.

Their culture is so simple, that no one can well afford to be without a bed of them, for any early display of gorgeous bloom.

They are natives of Persia, and the name is derived from *tulipan*, a turban, the calyx of the flower resembling that Eastern head-dress. The Turks first cultivated them, and from thence they were sent to Vienna. At first they were supposed to be eatable, like onions, but were found unpalatable; they then were preserved in sugar, but their taste was not improved, so they were thrown out upon a refuse heap as worthless trash; here they bloomed, and thus revealed the beauty of the flower.

Conrad Gesner, the Swiss botanist, first saw the flower in 1559, and described it scientifically. Many years afterwards, Linnaeus gave the flower the specific name of *Gesneriana*, in honor of Gesner.

Linnaeus styles bulbs, "The hybernacle, or winter lodge, of the young plants." Darwin says, "These bulbs in every respect resemble buds, except in their being produced under ground, and include the leaves and flowers in miniature which are to be expanded in the ensuing spring. By cautiously cutting in winter through the concentric coats of a Tulip root, longitudinally from the top to the base, and taking them off successively, the whole flower of the next summer's Tulip is beautifully seen by the naked eye, with its petals, pistils, and stamens. The flowers exist in other bulbs in the same manner, but their individual flowers being of less size, they are not so easily dissected, or so conspicuous to the naked eye.

THE *Pecora Transcript* says that recently a broken driving wheel on a locomotive ran over twelve miles of the Chicago and Alton Railroad and broke 130 rails before the accident was discovered.

State Board of Agriculture for 1872.

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Contra Costa Agricultural Society.—President—G. L. Louche, Vice-Presidents, G. M. Bryant and Chas. E. Howard; Directors, J. H. Hazeltine and Henry C. Gallagher; Secretary, O. F. Alley; Treasurer, S. W. Johnson.

Daily Weather Record,

By the U. S. Army Signal Service, for the week ending Wednesday, May 15, 1872.

Place.	Date.	Time.	Height of Barometer.	Thermometer.	Direction of Wind.	Force of Wind.	Force of Wind to Direction.	Amount of Rain.	State of Weather.
San Francisco.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
San Diego.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Portland, Or.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Virg., M. T.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Cornwall.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Chesapeake.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Denver.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Ozark.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy
Davenport.	Thurs., 9.	29.01	57.9	Cal.	6	Fresh	4-4	0.1	Foggy
	Fri., 10.	29.00	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sat., 11.	29.99	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Sun., 12.	29.85	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Mon., 13.	29.81	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Tu., 14.	29.82	58.3	W.	6	Fresh	4-4	0.1	Foggy
	Wed., 15.	29.80	58.3	W.	6	Fresh	4-4	0.1	Foggy

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., May 16.

FLOUR—We note a good local demand with a good inquiry for export. Sales reported embrace 15,000 bbls. Cal. extra, 3,000 do. Cal. superfine, and 5,000 Oregon extra. The local millers have advanced rates for extra within the past few days. They first raised 12½c. and yesterday made an advance of 12½c. more. Oregon receipts are not heavy. We quote prices as follows:
Superfine, \$5.00@5.12½; extra, in sacks, of 196 lbs. \$6.62½; Oregon brands, \$5.50@ \$6.37½ in sacks of 196 lbs.

WHEAT—The market has been active with good demand since our last review. Sales aggregate 20,000 sacks fair to choice at \$1.90@2.75 per 100 lbs. Quotable at close at \$1.90@2.10 per 100 lbs.
The latest Liverpool market quotation comes through at 12s. 10d. @13s. per cwt.

BARLEY—Market quiet. Inquiry for brewing is light, but there is an active demand for bright feed in the interior. Sales embrace 7,000 sacks ordinary coast to choice bay, at \$1.35@1.52½, which is the range at close.

OATS—Market has been quiet during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.45@1.65 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.65 per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.25 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.50 per 100 lbs.

RYE—Is quiet at \$2.10 per 100 lbs.

STRAW—Quotable at \$8.00@8.50 per ton by the cargo.

BRAN—Is selling at \$17@17½ per ton from the mill.

MIDDINGS—For feed, are \$22.50 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light, and prices at close are \$12.00@21.00 for fair to choice per ton.

HONEY—New is selling at 20¢@25¢ in the comb, and 12¢@16¢ strained; old in comb 8¢@15¢; do strained 8¢@14¢ per lb.

POTATOES—The market has not improved. Sales of new at \$2.00@2.50; old crop 50¢@75¢.

HOPS—The range is 50¢@75¢.

HIDES—During past week 1,910 Cal. dry sold at 18½¢@19, and 1,960 salted at 8½¢@9½¢; 2,460 Mexican dry at 19½¢@19¾¢.

WOOL—The market is still very quiet and prices are nominal; contrary to general expectations. Receipts are large and stocks are accumulating, but sales are light. One dealer report sales of 100,000 lbs and another reports sales of 155,000 lbs, mostly on former contracts. Shippers and buyers have as yet affected no compromise with sellers, and the former expect the latter to conform to their views shortly. Fair to choice spring is nominally 42½¢@47½¢.

TALLOW—Market steady at 8½¢@9c. per lb.

SEEDS—Flax 3c.; Canary, 5¢@7c.; Alfalfa, 16¢@20c.; Mustard, 3¢@6c. for the different kinds.

PROVISIONS—California Bacon 13¢@14½¢; Oregon, 13½¢@14. Eastern do. 11½¢@12½¢ for clear and 14¢@15 for sugar-cured Breakfast; Cal. Hams 14½¢@15; Eastern do. 14½¢@15½¢; California Smoked Beef, 14c. per lb.

BEANS—Market continues firm at a further advance and the following are jobbing rates: Pea \$4.25; small White \$4; Small Butter \$3.50, large \$4.00; Bayo, \$4.25; Pink and Red are scarce.

ONIONS—Sales of a few sacks of new Red at 3¢@3½ per lb.

NUTS—California Almonds, 8¢@10c. for hard and 18¢@25 for soft shell; Peanuts, 5¢@8c.; Pecan, 25¢ per lb.; Hickory, 12c.; Brazil, 16c.; Chili Walnuts, 15c.; Italian Chestnuts 25c.; Eastern Chestnuts, 15¢@20c.; French Almonds, 25¢@30c.; Princess Almonds, 35¢@40c.; Los Angeles Walnuts, 20c.; Cocoa-nuts, \$6.00@8.00 per 100.

FRESH MEAT—Market remains as it was last week. There is some dispute between retailers and wholesale men with report to selling Lambs plucks, which is not yet settled. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 9¢@10 per lb. do. 2d quality 8¢@9 per lb.; do. 3d do. 5¢@7c.

VEAL—Quotable at 6¢@10c.

MUTTON—6¢@7c. per lb.

LAMB—Easier at 9¢@10c.

PORK—Undressed grain-fed is quotable at 6¢@6½c. dressed, grain-fed, 9¢@9½c. per lb.

POULTRY—Live Turkeys, 23¢@25c. per lb.; dressed, 25 per lb.; large Hens 30¢@30.00; Roosters, \$9.00@10.00 per dozen; Spring Chickens, \$5.00@7.00; Ducks, tame, \$9.00@ \$10.00 per doz.; Geese, \$12¢@15 per dozen.

WILD GAME—Dealers pay the following prices for lots from the country: Hare, \$3.00@ \$3.50 per dozen; Rabbits, \$1.25@1.50. English Snipe, \$2.00@2.50.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in fair supply and active demand; it may be quoted at 22½¢@27½¢, with a few choice lots at 30; New firkin is quotable at 25¢@27½¢; old is dull at 12½¢@20c.

CHEESE—New California, 12½¢@16c.; Eastern

is jobbing at 22½¢@25c. per lb.
Eggs—California fresh, 33¢@34c. per doz.; Eastern 27½¢@30.

LARD—California 12½¢@13½¢; Oregon, none in market. Eastern in cases 14¢@14½¢; do in tcs. 11½¢@12c. per lb.

FRUIT.
Tah. Oranges, M. 15¢@18 00 Apples, eating, bx — @ 3 00
California do. 12 00@10 00 do cooking, bx — @ 1 50
Limes, M. 30 00 Pineapples — — @ 7 00
Austrian Lemons, M — — Strawberries — do 6 10c
Sicily do M — — Gooseberries — do 6 7c
Cal. do M \$40 00 45 00 Cherries — — @ 2 50
Bananas, bunch 2 50 @ 3 50

DRIED FRUIT.
Apples, M. 8¢@10 Raisins, M. 5¢@15
Pears, M. 8¢@10 Black Figs, M. 7¢@9
Apricots, M. 5¢@10 White, do — 15¢@20
Plums, M. 5¢@10

VEGETABLES.
Cabbage, M. 2¢@3 Cucumbers per doz. 1 00@1 25
Garlic, M. 4¢@6 Marf. Squash, ton — 3 00
Rhubarb per doz. 4¢@6 Asparagus, M. 3¢@5
Green Peas, M. 3¢@4 Tomatoes — — 15¢@16
Sweet Peas, M. 3¢@4

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report a fair inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market is firm for all descriptions. Burlap sacks 17½¢@18c.; Flour sacks 10½¢@10¾¢ for qrs. and 16¢@16½¢ for hfs. Standard Gunnies are jobbing at 20¢@21c.; Wool 75¢@80c.; Hessians 40 inch goods 14¢@14½¢ per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been good with a very active demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows:

Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$12.50@15; Cedar \$50@55. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices was adopted by the Lumber Dealers' Exchange on the 15th inst. the advance being \$2.50 per M.

Pugot Sound Pine—
Rough, M. 22 50
Fencing and Stepping, M. 35 00
Fencing, second quality, M. 25 00
Laths, M. 3 00
Fencing, M. lineal foot. 3 c
Redwood—
Rough, M. 22 50
Rough refuse, M. 17 00
Rough Pickets, M. 18 00
Rough Pickets, pointed, M. 20 00
Fancy Pickets, M. 30 00
Siding, M. 25 00
Tongued and Grooved, surfaced, M. 37 50
Do do refuse, M. 25 00
Half-inch surfaced, M. 35 00
Rustic M. 40 00
Batten M. lineal foot. 3 c
Shingles M. 3 00

Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$60 per M.

COFFEE—Costa Rica 20½¢; Guatemala 18c. Java 26c.; Manilla, 19½¢; Rio 19½¢@20; Ground Coffee in cases 30c.; Chicory, 12½¢.

SPICES—Allspice 14¢@15c. Cloves 16¢@17c. Cassia 35¢@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15¢ per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½¢@5½¢, Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1¢@2-bb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60¢@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, \$10.50@11; in kits No. 1 \$2.50@2.75; do No. 2, \$2.00@2.25. Smoked Salmon, 7¢@7½ per lb.

NAILS—Quotable at \$6 25¢@9.00 for assorted sizes.

SUGAR—We quote Cal. Cube at 12½¢; Circle A Crushed, 12½¢, and Granulated 12c.; Golden C. 10½¢@11c.; Hawaiian 7½¢. as extremes per lb.

SYRUP—Prices may be given as follows: 72½¢ in bbls, 75 in hf bbls, and 80c in kegs.

SALT—California Bay sells at \$6¢@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local

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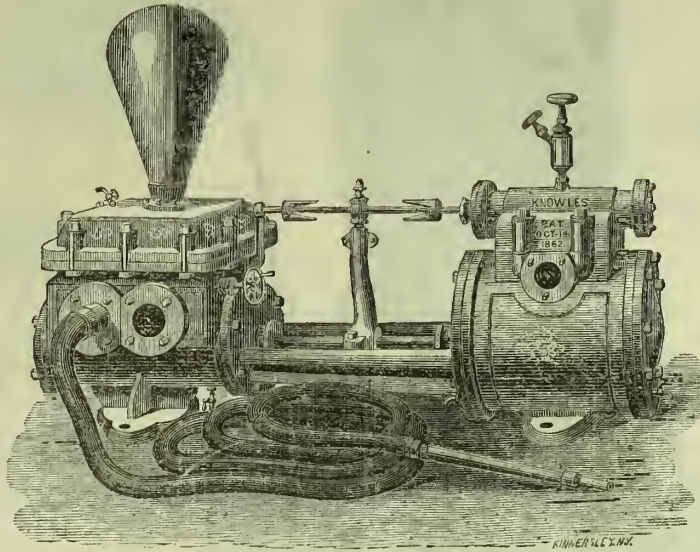
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Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

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It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

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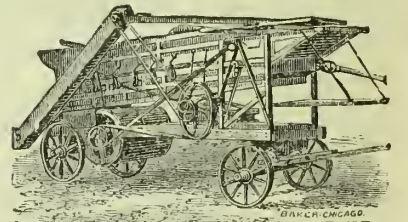
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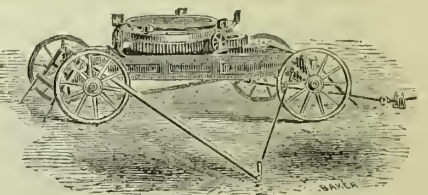
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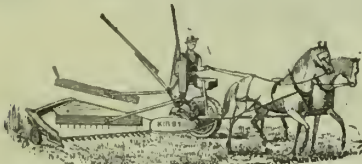


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Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

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THE WALTER A. WOOD

Mowing and Reaping Machine Co.

Will sell a First-Class MOWER, REAPER or COMBINED MACHINE, for a Less Price than any other First-Class Machine is sold on this coast.

A Full Stock of EXTRAS constantly on hand for all our Machines.

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Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

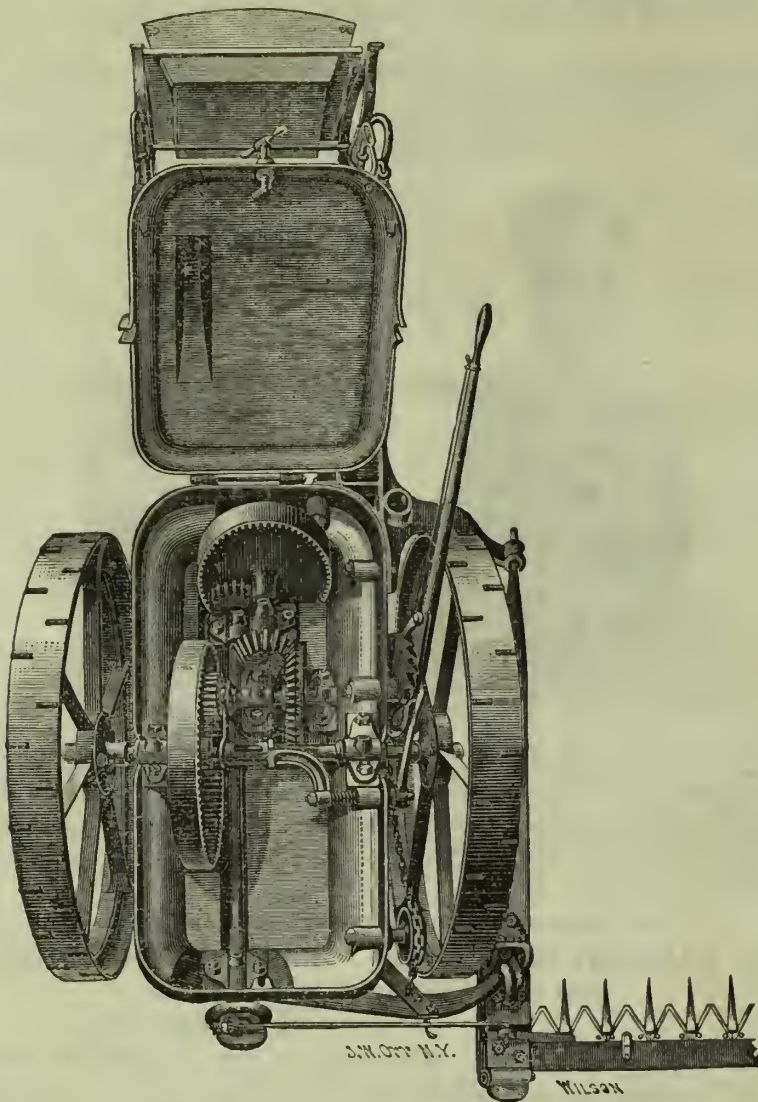
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15v3-3m T. B. FLINT.

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains.

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Haines' Genuine Headers,

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Hollingsworth Sulky Rakes,

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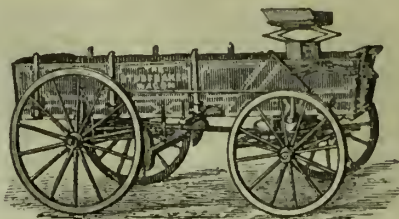
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FOR QUALITY,

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GOOD PROPORTION,

AND EXCELLENT STYLE,

They Have no Peer.

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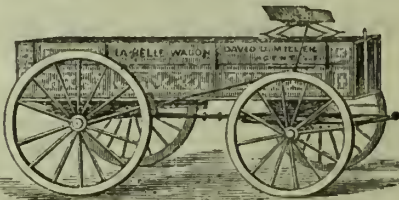
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The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

16v4-3m

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JUST RECEIVED FROM

THE CELEBRATED ZUFELT & CO.,
Sheboygan Falls, Wis., established in 1850. Also the

Celebrated La Belle Wagon.

Manufactured by FARNSWORTH, WOODWARD & CO.,
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PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.

3 in Thimble Skein. \$120	3 in Running Gear. \$90
3 1/4 " " " 125	3 1/4 " " " 95
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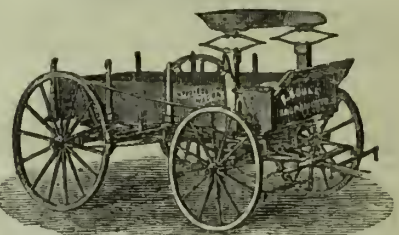
Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring Seats, without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

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No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Limbs, Splints, Wind Galls and Spavins. Sweeney, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

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It is sold everywhere on the Coast.

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With neither Engine, Piston, or Plunger.

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Choice Roses and Pot Plants of every variety. Trees and Plants securely packed to travel any distance.

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Parties planting can find in this establishment whatever may be wanted, for use and beauty, in furnishing a place without being obliged to go from one Nursery to another.

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12v3-3m

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Seeds forwarded by mail to any part of the United States at 8 cents per pound.

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50,000 pounds California Alfalfa, grown by J. Wilcox and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

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Also ten Rams, and thirteen Ewes and Lambs, Silesian Sheep.

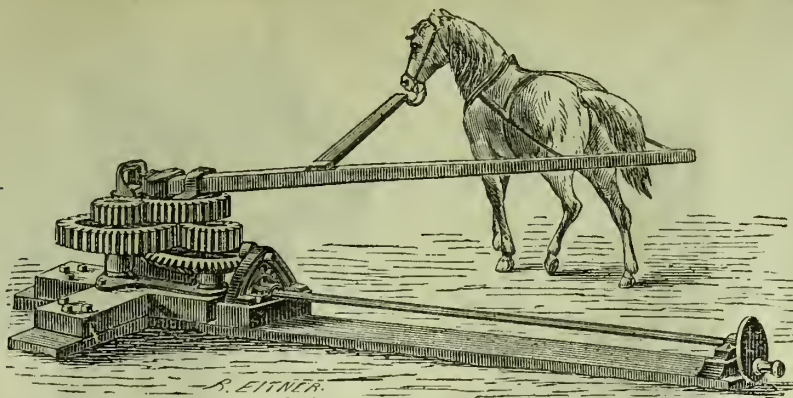
Also five hundred Calves of the best milk stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats. ROBT BECK, secretary

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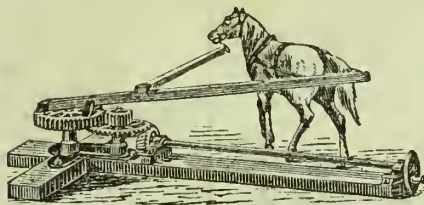
Patented November 23, 1869.

These Mills have stood the test and received the First Premium at the Mechanics' Fair in this city, and we challenge the world to produce their equal in point of Beauty, Strength, Durability and Simplicity.

They are the most easily controlled, run with the lightest wind, and are the least liable to get out of order of any Mill yet before the public.

We use the best material, and our workmanship is superior to all other in the State. All of the above we guarantee.

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Family Sewing Machine

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Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

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Its Work Received the First Premium

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PERFECT SATISFACTION GUARANTEED.

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22v2-9m

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Between Front and Battery.....SAN FRANCISCO.

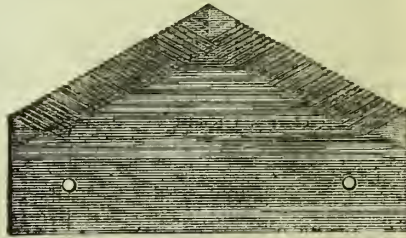
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DEWEY & CO.,

United States and Foreign Patent Agents, publishers Scientific Press and the Pacific Rural Press, 333 Montgomery St., S. E. corner of California St., San Francisco.

Patents for Farm Implements and Machinery.

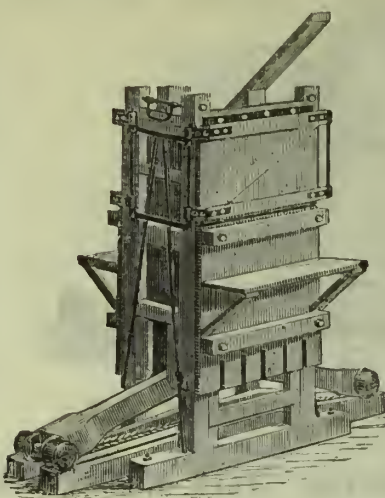
Our familiar acquaintance with the implements and machinery (including patented and unpatented devices), in use on this coast, together with one long and successful experience in obtaining patents for inventors of the Pacific States, enables us to render better advice and services to inventors than it is possible for them to procure elsewhere. Permanently established, our interest is mutual with home inventors, all of whom will find us honest, reliable and reasonable in every transaction. Patent circulars sent free.

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THE EAGLE HAY PRESS.



The above is a correct representation of this remarkable

Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAI, OF ILLINOIS, TO WHOM LETTERS PATENT WERE ISSUED JANUARY 10TH, 1865, AND JULY 24TH, 1866.

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All who have seen or used these Presses pronounce them superior to anything used heretofore. The power is applied by means of two levers, and it will be seen the power increases in ratio to the resistance; as the levers approach a horizontal position the power can scarcely be estimated. It is not only a powerful Press, but has the advantage of being Cheap, and also Simple, therefore not liable to get out of order.

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These Presses are now manufactured in San Francisco by the

Kimball Car and Carriage MANUFACTURING COMPANY,

Who are the proprietors on the Pacific Coast, and will endeavor to have a supply constantly on hand.

Every Press made by them is WARRANTED to give satisfaction. Agents wanted.

PRICE, \$250.

18v3-3m

Genuine Haines

Headers, from 10 to 15 feet cut, made by Walter A. Wood at Housack Falls, N. Y., with all his improvements, and having also DOANE'S PATENT, ADJUSTABLE REEL. No other Headers have these improvements: Take note but the HAINES' IMPROVED HEADERS made by Wood, especially for California.

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AS IMPROVED is the perfection of the Threshing Machine. We have them from 30 to 40 inch, with NEW FEED TABLE, LARGE SHOE, DOUBLE FAN, ELEVATOR, DOUBLE DISCHARGE, etc., made especially for the wants of California, after years of study. It has greater cleaning capacity than any other, and is EVERY WAY PERFECT. No other machine has ever equalled "The Russell;" none can excel it.

Treadwell & Co.

SAN FRANCISCO.

17v3-4f



PACIFIC STONE COMPANY.

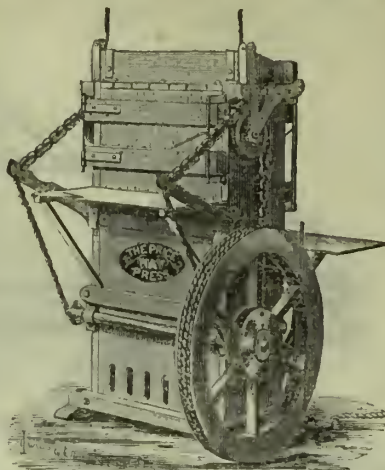
Ransome's Patents,

For which Commissioners for the International Exhibition of 1862 awarded the Prize Medal, and Gold Medal at the Mechanics' Institute Fair, 1871, of San Francisco.

REMOVAL.

This Company have removed from the corner of Turk and Larkin streets, to their new and commodious works corner of Greenwich and Octavia. They have established an office and salesyard at the Junction of Market and Bush, where they will keep constantly on hand an assortment of ORNAMENTAL, BUILDING, CEMENTERY and GRINDSTONES. Orders will be received at the above office from all who wish to get good work at low prices. Send for Circular.

THE PRICE HAY PRESS.



(Sometimes called the Petaluma Press.)

Bales twice as fast as any other in the world.

Frequently bales over

Twenty Tons Per Day.

NEARLY 300 IN USE IN THIS STATE.

Eight years' use, and the sale of three hundred machines on the Pacific Coast in competition with the best Eastern baling presses, has proven this to be the most Extraordinary and Successful Machine of its Class ever invented. For the past six years it has baled nearly nine-tenths of the hay west of the Rocky Mountains.

Their wonderful capacity is due chiefly to the fact that they are not set up on stilts, with the machinery in the bottom, like every other Power Press in the United States, but the box for the reception of hay extends from the top of the Press clear down to the ground, thus giving room in a low, small Press, for a large bale.

DESCRIPTION AND PRICE LIST.

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PACIFIC RURAL PRESS

Volume III.]

SAN FRANCISCO, SATURDAY, MAY 25, 1872.

[Number 21.

The Merchants' Exchange Building.

We take occasion in this number of our paper, to devote the first page to a short description of the Temple of Commerce of San Francisco—the Merchants' Exchange. The edifice, as the cut shows, is a fine one and aptly adorns the commercial metropolis of the Pacific, a good illustration of its wealth and prosperity. It also affords a notable evidence of the liberality of our merchants and the spirit and energy which animates them, while it presents an unmistakable index that the shaping of the high destiny which awaits the future of our city, has not been committed to inappreciative hands.

The building was commenced in July, 1866, and was formally opened on the 15th of July, 1867. It occupies a frontage of 126 feet on California street and a depth of 137½ feet on Leidesdorff street. It comprises two separate edifices, front and rear, connected by a covered court in the center, roofed over with glass. The front building is three stories high, with basement; the rear has two stories, with a cellar and attic. The first floor of the rear building is divided into two rooms, one being used as an Exchange and Reading room, measuring 85x52½ feet, with a height of 25 feet. The entire building is well ventilated and is supplied with water and gas. The structure is divided up admirably, all the offices being pleasant and spacious. The principal story of the front building comprises four large offices, 58x25. The second and third stories are divided into offices for general business purposes, and the Chamber of Commerce have a large room in the second story, which is fitted up in fine stylo. There is a general entrance on California street, with four lesser ones, exclusive of entrance to basement offices, and one private one on Leidesdorff street.

The building, on California street, displays a bold and open front. The Doric, Ionic and Corinthian orders are respectively to be seen. The tower in front is 120 feet above the sidewalk and contains a clock with four separate dials. The tower is surmounted by a balustrade, and the projecting corners are embellished with prominent turrets, covered with lead. The dome is covered with the same metal. The building cost over \$170,000, iron entering largely into its composition. The following has been written specially for our purpose, by Mr. R. G. Sneath, a well known former business man of this city, and a leader in establishing and maintaining its highest interests:

Its Character and Utility.

The Merchants' Exchange is justly entitled a gathering place for the transaction of business—where is accumulated a

large collection of the best and latest newspapers, magazines, maps, charts, books on commercial and nautical matters, statistical tables on various subjects; manifests of vessels in advance of the ship's arrival; an account of the daily and hourly arrival of passengers; detailed report of the imports and exports of merchandise and produce; both foreign and domestic telegraph dispatches hourly from all parts of the world; constant dispatches, night and day from the outer harbor, of vessels approaching port; regular reports from

latest information relating to the business in hand, facilitates transactions so as to admit of the extension of business to an unlimited degree.

Enterprise is stimulated by association and by a cheerful concurrence and unanimity of feeling and action. Public enterprises, and great actions are most always stimulated by meetings of the masses so as to bring them into one line of thought, and when the convenience of the public is studied, for the assemblage of the masses at any time, night or day, there

strong friendships, bitter trials and sad bereavements, which make all the world akin, and people human.

In unity there is strength, and in the concentration of the largest wealth and influence of a large city, you have the foundation necessary to the effective promulgation of ideas and for harmonizing and assimilating thought, which, supported by the wealth and intelligence of the mass of the people, gives an inexhaustible and overwhelming moral force, indicative of grand results. Such is the purpose in a measure of an Exchange, depending upon the people, and upon there being a unit in action, in good works.

The objects of the Exchange are all for the general good, or the greatest good to the greatest number. No cliques or ring, and no favoritism; all that meet there, are entitled to equal privileges and attention. Every object, thing and expenditure about the premises are so many stamps of utility, and it would be difficult to conceive a measure more useful in design and beneficial in results, than the establishment of this monument of the wisdom, sagacity and enterprise of our people and its dedication to the public good.

Original and Present Officers.

The following is a list of the first officers of the Exchange. Trustees: Thos. H. Selby, (President), J. B. E. Cavallier, Louis McLane, R. G. Sneath, D. Stern, J. W. Stow, A. Hayward; Treas., W. C. Ralston; Sec., J. A. Coolidge.

The following are the present Trustees: Hon. Thos. H. Selby, (President), J. B. E. Cavallier, R. G. Sneath, Albert Dibblee, Robt. B. Swain, J. W. H. Campbell, S. B. Boswell; Sec., J. A. Coolidge. Our present article being lengthy we defer the publication of the list of members (comprising over 500 prominent names) to some future issue.

The Wool Market.

As we predicted one, two and three weeks ago, there has been no advance in the price of wools; nor can we see any special reason why there should be any for some time to come. It is now very clear that the apparent scarcity that seemed to prevail earlier in

the season causing a spasmodic rise in wools was not wholly real; for the rise that did occur had the effect to bring out large quantities that had remained in first hands, and which till then were unknown to wool merchants.

This unexpected supply, together with large increased receipts from foreign countries, has had the effect to materially quiet the fears of manufacturers as regards an ample stock of material, and at present all seem inclined to wait, rather than purchase largely at present prices. Common wools are now worth about thirty-five cents; very choice lots might possibly find buyers at from thirty-eight to forty cents.

Ten thousand cans of milk, it is estimated, are carried into New York, daily.



THE MERCHANTS' EXCHANGE BUILDING, SAN FRANCISCO, CAL.

the U. S. Signal Service Station located in the building, and in short everything in the way of information necessary for a business man to form a reasonable judgment upon almost any business transaction without leaving the premises.

The necessity of such a place in every well regulated city, is manifest; and the fact of their existence since and before the birth of Christ down to the present day, saves the necessity perhaps of an extended article upon the subject at this time, where it may be said, that every commercial city, of any importance, upon the face of the globe, have their business exchanges.

"Time is money," and the economy of time is evident in such a regulation as, "change hour," in an Exchange, where all come together at a stated hour for the transaction of business. Not only is time economized but the concentration of the

we may expect them, and this is one of the great purposes of an Exchange—here and elsewhere. No political or sectarian matter has ever been urged or maintained within the walls of this institution nor ever should be in any of like character.

Visitors to the Exchange are not limited to any calling or class of people; those that are regular attendants and participants are expected to subscribe two dollars monthly. Travelers and visitors from the country or neighboring cities and towns, are always welcome to the use of the Exchange night or day, without either a card or introduction; the doors are always open to them.

To the stranger in attendance on "change" it would not appear all business; the constant arrivals and departures, leave-taking and congratulations, regrets and surprises manifested by the busy and changing throng, would give token of

CORRESPONDENCE.

Writing for the Paper.

EDITORS RURAL PRESS:—You say "write for your paper;" will you permit me to express a doubt as to so broad an invitation. You have many subscribers and readers of the RURAL, with good raising, who may be well skilled in farming, gardening, stock raising and house-keeping, who are not in the habit of writing, especially for print, who in fact have never seen the inside of a printing office, and know nothing of the mode of operation, or as a classic cuss would say, by way of showing his Latin, *modus operandi*; they do not know that their prize essay is torn into slips and distributed to type-setters, that each one may furnish his case ready for the form or press; hence you find many who for the first time set to work through your invitation and write without any subject, over both sides of the paper what they think creditable to themselves, ornamental to the paper, and enlightening to mankind, only to be highly noticed on receiving the paper to find it all mixed up without sense or rhyme, over which the printer has been shockingly provoked and disgusted finally, to catch the abuse of the writer for what is thought to be the printer's fault, in making a muddle of an ideal gem. Would it not be well for the editor to instruct as to how and what to write about, as well as the ramifications and much complicated labor of preparing manuscript for print. Again; to write, one must or ought to take more time, and use more care than most of us feel inclined to take, and more than Mr. W. B. could possibly spare from his sleeping hours; as for me when I attempt to write I pitch in and exercise too little care as to autography or perspicuity, but drive ahead sometimes of my thoughts. When a word is used that raises a question as to the proper way to spell, to convey the true meaning, I conclude the type-setter knows how to spell, and has a dictionary also at his side, or should have, which I have not, and thus I let it "flicker." But I will not pass from the subject without condemning some few modern writers for intentional bad spelling.

I presume, Mr. Editor, you wish persons to write, so as to have variety and that you impart information, useful and interesting. If this is the case, you should be mild in your criticisms, and avoid wounding the feelings of modest ignorance. It is a common practice for Editors to ask for notes of political and other matters, but this is often a cause of mortification. The writer once furnished notes during a political campaign, which were too often perverted to the shame of the note taker, making him report meetings of five thousand, when he said five hundred. Again; the Editor in an effort to dress an article, often totally spoils the meaning of the writer.

To conclude, we cannot all be writers; it is a gift, in part, and a trade, and some may not expect to succeed. There is one short article in the PRESS of April 27th, on "Rearing of Children," which will bear reprinting and setting in heavy lead; all parents should read and practice it, it would save many a child from growing up for the prison and fit them for high stations, in after life, which some must fill, with credit or leave in shame and mortification.

A. D. ROCK.

Nevada, May 13, 1872.

Los Banos, Merced County.

EDITORS PRESS:—The San Joaquin and King's River Canal is completed to this point and was filled with water for irrigating purposes about the middle of April. Our grain needed rain at that time, and those who had land seeded below the canal made all possible haste to get water on it. The Fowler settlement—myself included—built a ditch from the canal to their grain fields, four miles long, capable of conveying thirty feet of water, and have been irrigating two weeks. Taking all things into consideration we have made good progress. The grain that has been irrigated looks remarkably well; the rest is drying up—some of it dead. We flood our land. If we could have got the water earlier we would have made a much larger crop. Mr. Welcome Fowler has in 400 acres and thinks he would have made 4,000 bushels more. Our late grain will make more than the early. We put in none until after the first rains. Mr. Fowler has been farming in different counties of the State for 18 years and thinks some of his grain will yield 50 bushels to the acre. We do not expect to be troubled about drouth hereafter. The most of us have our alfalfa patches and they look well. Sowed in March—foot high. Mr. John Fowler has between 40 and 50 acres sowed to alfalfa.

If we had a postoffice in this section I think I could succeed in raising a club for

the PRESS. I have been reading the PRESS for nearly a year and like it better the more I read it. Sometimes I get my paper regularly for two or three months and again miss two or three copies together. W. F. CLARKE.

May 9th, 1872.

Nothing gives force and character to an article, better than the writer's full signature, and we are glad to see our correspondents adopting the plan.

Farm House Chat.

(Written for the PRESS, by MARY MOUNTAIN.)

Among farmers' wives there are thoughtful, intelligent women who can hardly avoid giving a share of attention to the modern question of rights; not from pure selfishness, but because the pleasantness of home—the present and future welfare of children, has such close dependence upon what mothers can do; and remembering their self-sacrificing industry and economy, it would seem that no individual rights should be more frankly and generously acknowledged.

Hundreds of farmers are sound and smart on questions of business; knowing as to good points of stock; never to be caught napping when the very nick of time arrives for special farming operations; but talk to them of the value of beauty in our daily surroundings; of the infinite importance to human health and comfort of large, airy sleeping rooms, convenient bathing rooms, plenty of fresh water always at hand in the kitchen, plenty of nice, dry wood, plenty of good books and papers to refresh the souls of old and young; well, if you are a stranger, thus dividing your morsels of practical wisdom, these farmers will return such a troubled, stupid look as will convince you that your good seed is falling upon barren soil.

But if the wives hunger and thirst for these things, and introduce such unwelcome topics with a show of persistence, it is set down as "scolding," and the husbands generally settle it, and imagine they subdue it by declaring that "women don't know what they want, anyhow."

This is a "crusher," and has worked wonders with timid natures that really love peace, and will suffer wrongs rather than win rights at the expense of constant warfare.

In dark, ill-arranged rooms, women have worked and waited patiently for years; comforting their weariness with thought of some favorite household arrangement that shall surely be theirs when the new house grows up to change and brighten the dull current of farm life. And when the new house is built, and we walk with its mistress through the echoing rooms, we perceive that it is not the joy and pride of her own heart, but an exact copy of Brown's, Jones's, and all the other new houses upon which the carpenter has worked and got his hand in at certain arrangements that he thinks are "good enough for anybody." But we listen to this plaintive voice of lamentation: "Here you see is a little pantry—won't hold much—and things will have to be stored up stairs or down cellar, and the stairs are away off across the dining room. It makes so many steps, and I ain't so spry as I used to be. I had always been hoping to have things snug and handy in the new house, but the carpenter wanted his way, and Joseph thinks we women don't know what we want."

Glancing over Joseph's wide territory we see that he is clumsily striving to conform barns, sheds, yards, doors and gates to some rude plan of his own, and would be hugely disgusted if a powerful, terrific old ogre, should force him to give up that precious object of life for the simple reason that he "didn't know what he wanted!" And if said ogre could keep on meddling with Joseph's daily life, upsetting his little plans, mocking at his innocent hopes, would it be too much to expect from the harrassed Joseph that he should love and respect the detestable ogre?

Let us hope that the majority of Josephs will not set themselves up as dreaded household ogres, and find some dark day that the love and respect they exact has become a sham article—of no real use to anybody.

Among the surprising facts of life we find those curious, energetic natures that were born with a supreme talent for "bossing"—for insisting that everybody's enjoyment shall be cut after their own narrow pattern; and utterly blinded by egotism they go trampling over the most delicate "rights" without in the least

knowing what they are about. Crooked dispositions of men and women develop most vigorously in solitary places, where there is little of social influence to tone down the rough, erabbed outgrowth; and so it is that in farm houses are most frequently found these specimens of quaint oddity or hateful tyranny.

Husbands and wives who find themselves in "holy bonds" with this sort, must cultivate patient indifference and look to the next world for compensation.

I have heard men rather proudly declare that California is very liberal in her legal view of woman, acknowledging the wife as equal partner of the husband, etc.

What could be desired more truly generous and just than this?

But once upon a time a certain faithful, non-aggressive wife was extremely anxious to earn a little money for an afflicted sister. Growing desperate with her failures, and recalling the fact of equal partnership, she asked her husband if the law would allow her to sell a colt or a calf.

"No, indeed," quoth the amazed senior partner, "the husband alone can make legal sale of the mutual property; and," continued he with an air of pensive resignation, "the present laws might bear rather hard upon a woman and her children, for a worthless scamp of a husband can sell everything without her consent or signature, unless she has entered a homestead, and very few women understand about that."

So we may conclude that the "equal partnership" is a brilliant legal fiction, and entirely harmless, unless some reckless little woman undertakes to beat her brains against it, and spends her strength in trying to reconcile absurdities. She will soon perceive that actual equality or freedom of partnership in spending the capital of the concern would bring swift dismay and ruin to many a conscientious husband trying to build up a home and a business, while the heedless, silly wife has no higher ambition than to build up the most fashionable out-rigging and sport the most expensive fol-de-rols.

It is almost as humiliating to confess that some women are not fitted for the responsibility of equal partnership, as to know that some men are wholly incompetent to act as sole, legal head of the firm. Doubtless the woman ought to be fitted and able to become "guide, philosopher and friend" to the incompetent man.

The utmost skill and wisdom of our strong-minded sisters will be needed to settle this special muddle of rights, and secure mutual justice among domestic skirmishers, and harmonious working of the great matrimonial problem. In one of their eloquent lectures there is promise of a future for woman made bright and easy; first, by suffrage; secondly, by a system of co-operation that shall make short work of cooking, washing, ironing, patching, house-cleaning, etc., thus leaving woman free to cultivate her mind, entertain wise and lofty ambitions, discipline her character to nobler uses than to cook three meals per day 365 days in every year.

This a beautiful theory, and may be made available in cities and villages, but can bring little present comfort to farmers' wives, who live at such magnificent distances from everything and everybody. Yet 'tis right in these isolated homes that cheering hopes and helps are most needed and appreciated—right among these busy workers the stimulus of a noble, humanizing ambition will do most good.

The toiling wife of the average farmer has very little leisure for self-culture, and so little of public diversion or social recreation that whenever a chance occurs in her favor she should be encouraged to enjoy the rare treat fully and heartily; not even her husband can know how much she needs it, or how cruel it is to chill her gladness with a wet blanket of peevish grumbling or ill-timed worry.

Parents and children should make the most of their chances for jollity; let it not be truly said that American farmers take their pleasures more sadly than anybody else. Sometimes the wife sinks too willingly into the Slough of Despond, clings to her burdens and won't let them be lifted even while she grumbles that they are grievous to be borne.

"Come, Sally, slip on your bonnet and take a little ride. I've got to go round by Jones's and you can make a call and—"

"No, Indeed! here's the bread to make, the butter to pack, the milk to skim; no time for me to go pleasurin' round the country."

Yet, as kind-hearted John drives off alone she feels hurt and abused because she cannot go.

And can she not? Would it not be better to lose and let spoil an occasional

mess of bread, milk or butter, than to waste and lose these chances for rest and refreshment? "Life is more than meat" and if we can make our duties so elastic as to slip on and off easily, how much better and happier for all concerned.

Perhaps the majority of married women are indifferent to political power because they know that it cannot assure them the simple, personal rights that depend wholly upon the large good nature and good sense of the two individuals bearing the same yoke.

The hard and selfish woman is not made a whit more tender because of the political power her husband wields. The harsh and arbitrary will of man can never change to soft and lovely flexibility at the flutter of a ballot in the wife's hand.

Many little troubles hurt worse than a few larger ones; and although a wise use of the ballot might remove legal inequalities, no sensible woman will expect it to contribute largely to the sum of human happiness.

"What then can be done? How can we obtain for our homes and children the good and pleasant things we earn by faithful performance of our share of labor? If the husband cannot see that half the yearly income (supposing the firm is out of debt) should be at our disposal, how could we make him see it?"

In the last chapter of Proverbs, Solomon answered this question for the virtuous woman of his times, giving her large control of funds for household purposes, for operations in real estate, merchandise and agriculture, also for disposal in charity. The husband has only to sit in the gates, attend to politics and praise his wife.

For conquering the sternness or stinginess of man, Mrs. Home Interests recommends good dinners—all the favorite dishes placed in battle array; and when the hungry stomach lays over them all, and the "savage" is quelled by surfeit of goodies, then open with smiles and the coaxingest words you can think of; not forgetting to put on your prettiest gown, a bow of bright ribbon, and look as young as you can, which is rather difficult to do immediately after such an unusual tussle over the cook stove.

Faith Rochester frowns at this toilsome artifice as unworthy a true Christian woman, and counsels an appeal to the better nature of the husband, believing—dear, trusting soul—that most men need only a little patient teaching and encouragement to "right about" joyfully and march to the music of the Golden Rule!

A review of her last book, "Woman's Worth and Worthlessness," suggests that it might do good if read by those who need to be followed up with a sharp stick.

She spares no fault or virtue of man or woman, and much of the scolding is a very good tonic. She declares, however, that woman should do no work that will make her "homely,"—perform no labor that will harden or deform her hands—eat no bread in the sweat of her brow. (O, my sister farmers, what will become of us at the great "showing of hands?")

The right of woman to preserve, as "a joy forever," her personal beauty, and never let it be marred by work or worry is so clearly proven that some of us can only swallow our chagrin and leave the matter with Gail and the other young girls whose beauty is so patent as to place them at once among the dainty ornaments of existence—superb mantel-fixings that must be handled with care, and only dusted occasionally. Query—Must not the handsome men also be "laid up on the shelf?"

THE LOWEST TYPE OF HUMANITY.—On the Island of Borneo has been found a certain race of wild creatures, of which kindred varieties have been discovered in the Philippine Islands, in Terra del Fuego, and in South America. They walked unusually, almost erect on two legs, and in that attitude measure about four feet in height. They are dark, wrinkled and hairy. They construct no habitations, form no families, scarcely associate together, sleep in caves and trees, feed on snakes and vermin, on ants, eggs, and on each other. They cannot be tamed, or forced to any labor, and are hunted and shot among the trees like the great gorilla, of which they are a stunted copy. When they are captured alive, one finds with surprise that their uncouth jabbering sounds like articulate language. They turn up a human face to gaze at their captors, and females show instincts of modesty; and, in fine, these wretched beings are men.

VERY NICE.—The wife of a New York *literateur* thinks it very nice to have an author for a husband. Whenever she feels restless he reads her something he has written, and in a few minutes she is in a profound and refreshing sleep.

SCIENTIFIC PROGRESS.

Relations of Calorific Power of Combustibles to Composition.

During the last session of the New York Lyceum of Natural History, a discussion arose on the above subject, in which the present writer startled most of the members present by announcing his conviction of the total fallacy of the prevalent mode of calculating hypothetically the calorific value of a coal or other combustible, from its elementary constitution. He claimed that, in believing that the same elements in a complex mixture, as well as in a homogeneous compound, even when present in the same centesimal proportions, must needs give the same heat on complete combustion, we ignore all the well-founded and accepted views of molecular dynamics and thermo-chemistry. As the products of complete combustion of carbon hydrogen materials were always molecularly identical—that is, carbonic acid and water—the materials themselves must have had identical molecular constitution originally, in order to exert the same amount of internal disturbance, while falling into the same new molecular arrangement. He cited many known facts to support his views, which gave rise to some discussion, and aroused especial opposition from the distinguished President of the Lyceum, Dr. Newberry, who remarked that if Professor Wurtz believed he could substantiate these revolutionary ideas, he should not pause, night or day, but devote himself exclusively to the task, the importance of the subject being unsurpassed by any other in the range of science!

With this preamble, we introduce the following extract from a report of a recent communication of Scheurer-Kestner and Meunier to the Academy of Sciences, on the Heat of Combustion of Lignites:

"Lignite, the authors found, is distinguished from coal also in this particular—that the latter emits a far greater quantity of heat than that due to the combustion of its elements (carbon and hydrogen). Attention is again called to the fact that it is impossible to judge of the value of a fuel according to its elementary composition; all calculations based upon such data are quite fallacious, and the authors prove this conclusively by referring especially to one of the samples of lignite they investigated."—*American Gas-Light Journal*.

CARBONIZED SEWAGE.—Mr. Hickey is engaged in India, says *Engineering*, in testing the efficacy of his invention of preserving sewage by carbonization. The main features of Mr. Hickey's plan are that he collects the gases evolved during carbonization, which he proposes to make available for town illumination, while the coke which remains has been found to be a most excellent deodorizer, and, mixed with the ammoniacal liquors collected from the gas retorts, it also forms a valuable manure. The production of gas for lighting purposes by the carbonization of ordure is not a novelty, but dates as far back as 1686. But whether it will ever be found practicable to illuminate towns with gas produced from their sewers is very doubtful. Mr. Hickey's experiments show that gas and coke can easily be made by his process, but the pecuniary success of the manufacture is not yet settled. The gas has an illuminating power of only 2½ candles.

TRANSMITTED RADIANT HEAT.—The question whether equal areas at different points of the solar surface, transmit equal energy towards the earth has not been satisfactorily answered. The author of *Mechanique Celeste*, finding by observation that equal areas do not transmit equal energies (the central regions transmitting, in opposition to his reasoning, much greater intensity than those near the border) explains the matter by showing that the solar atmosphere retards the passage of the rays causing a great diminution of the energy of the radiant heat projected towards the earth. Capt. John Ericsson, in a series of ingenious experiments with incandescent spheres, described in full in *Engineering*, shows the inaccuracy of this theory.

FAT FOUND IN BEER YEAST.—In an article by Dr. Vogel, read before the Academy of Science, in Munich, after referring to the fact that all cereals contain a larger or smaller quantity of fatty matter, which is an essential constituent of the grain, the author describes at length his experiments made for the purpose of extracting, by the means of ether, the fat contained in beer yeast, an oil boiling at about 200° Centigrade, specific gravity equal to 0.901; decomposed when heated above 300° Centigrade, and yielding acrolein. The quantity of this oil found in one liter of the yeast amounts to from 0.2 to 0.3 drams. It appears that this oil is, in most respects, similar to the fatty matter in barley.

EFFECT OF EXTREME COLD ON SNOW.—Dr. Kane, the arctic explorer, recorded the very striking and suggestive fact that snow, at a temperature of forty degrees below zero, F., loses much of its anti-fractional quality. He found it nearly as difficult to draw sleds upon such snow as upon sand.

DISCOVERY OF A NEW PLANET.—Prof. James C. Watson, of Ann Arbor, Mich., writes to the *Journal of Science*, that he discovered a new planet, on the night of April 4th, in the constellation Virgo. The planet shines like a star of the eleventh magnitude.

PRESERVATION OF WOOD.—Gen. Haupt contributes to the *May Van Nostrand*, a review of the chief processes proposed for the preservation of wood, and adds some deductions of his own. From his experiments and investigations he concludes:

1. That so long as the cells of wood are occupied by air and moisture, no preservative solutions can be introduced, and the expulsion of air and moisture must be the first step in any effective process for preserving timber from decay.

2. That water can be expelled by a long continued application of heat, but air only by expansion in a vacuum, and the combination of heat and vacuum will secure the most rapid expansion of both water and air.

3. That the preservative fluid must be introduced while the cells are empty, consequently the process must be carried on in vacuo.

4. That no pressure, however great, applied externally to the surface of timber, can force any fluid into the interior so long as air or water is contained in the cells. When air alone is present there may be penetration to a limited extent superficially, but water is practically incompressible. If, however, the pressure is applied at one end only of a stick, as in the Boucherie process, a fluid may be forced through and exclude from the other end.

GEOLOGICAL SUCCESS.—An instance of complete success in search founded on geological indications has just occurred in Sweden. An extensive coal bed of unusual depth in Europe, and of excellent quality, has been discovered at Raus, in Schonen, by boring on the strength of evidence afforded by the lithological formation existing there. At first the promises were not satisfactorily fulfilled. Eleven strata of coal, indeed, were pierced by going down 566 feet; but none of these were more than a foot or so in thickness. Five feet further a bed was penetrated over eight feet thick. Other borings prove the existence of coal of great extent. The shares of the company at once rose 700 per cent above their par value.—*Ex.*

PERUVIAN ANTIQUITIES.—The Geological museum of the University of Rome has received from King Victor Emanuel a magnificent collection of Peruvian antiquities, comprising a number of silver vases, some extremely curious musical instruments, a colored garment made from the bark of trees, and some arrows and lances. These last are notched, ornamented with feathers, and have wooden heads, showing that they belong to the period when the use of iron was unknown. The whole of these articles were found in a bed of guano, and evidently date from the earliest antiquity.

BOILER INCORUSTATION.—Experiments have been tried with favorable results, it is said, at Vienna on Béranger's plan of treating feed water for boilers. The water is softened by a solution of lime and forced through a particular kind of filter, which retains the generated precipitate. There is no necessity for waiting for the settling of the precipitate. From 10 to 15 filters, each of 0.1 cubic metre capacity, soften about 410 cubic metres of water per day.

ART MONUMENTS.—M. Demetrio Salazar, the Inspector of the National Museum, at Naples, is about to publish, in thirty parts, at fifteen shillings each, a series of photographs and chromo-lithographs of the Art Monuments of Southern Italy, from the fourth to the thirteenth century. This is the first great attempt of its kind, and is intended to show the growth and development of Italian art from its earliest rise.

The vacancy at the British Geological Survey office, caused by the death of Sir Roderick I. Murchison, has been filled up by the appointment of Professor Andrew Crombie Ramsay, L.L.D., F.R.S., as director-general. Professor Ramsay has for many years been director of the Geological Survey and Professor of Geology in the Royal School of Mines.

A REMARKABLE MINERAL.—A. Frenzel writes of a mineral, which forms in the winter in the Himmelsfahrt mine at Freiberg, but vanishes in the spring, when the weather begins to grow warm, or damp, though it forms 334 metres below the surface. An analysis gave

Magnesia.....	16.53
Sulphuric acid.....	32.62
Water.....	50.81—99.96

The Spectroscopic Association of Italy is the title of a new society, the main object of which will be "to enrich science, by the aid of the spectroscope, with new discoveries upon the physical constitution of the sun." The first number of the *Memoirs* of the Society has already been published.

XYLONITE, which is prepared by the action of nitric acid on woody fibre, is made into a sheeting or tissue impermeable to water, which may be used as a substitute for india-rubber in the manufacture of all water-proof articles.

Repeated spectroscopic measurements made last year by Professors Zollner and Vogel, in Germany, show that the velocity of rotation of the sun on its own axis is at the rate of six hundred and sixty miles an hour.

CANE-SUGAR when exposed to light in sealed tubes is converted into grape-sugar or glucose. The solution should be as concentrated as possible.

MECHANICAL PROGRESS.

Economy of the Hot Blast.

The first practical application of the hot blast was made in 1828 or 1829 by J. B. Neilson, an Englishman. Mr. N. and his colleagues after determining the great value of the invention for smelting ores, expected to see it generally employed for all furnace operations; but the result has been that practically, it is almost exclusively confined to smelting the ores of iron.

The earliest carefully recorded experiments with the hot blast were made at the Clyde Iron works, with the following result:—

For the year.....	1829	1831	1833
Temperature of blast.....	Cold	450° F.	612° F.
Coal used per ton of iron..	As coke.	As coke.	In raw state.
For fusion, cwt.....	133	86	40
For heating air, raw coal..	nil	6	8
For blowing engines, coal..	20	7	11
	153	98	59

From this it would appear that heating the air with 5 cwt. of coal had saved 47 cwt. of fuel in the furnace, and 8 cwt. similarly applied had been followed with an economy of 93 cwt., or above 69 per cent.

Besides this advantage the make was increased by more than one-third, and a blowing engine, which only supplied three furnaces with cold blast, was equal to four when the air was heated.

The iron trade hesitated somewhat in credit that the heat generated from 8 cwt. of fuel burnt outside the furnace, should be able to perform the duty of a very much larger weight burnt inside. Some writers on the metallurgy of iron, when speaking of the advantages of Neilson's system, have not perhaps been sufficiently careful in drawing a distinction between the saving directly due to its application and that arising in a collateral manner from its use. Looking at the question, however, in its commercial sense, the figures and language quoted from the work of Dufrenoy justified the character he gave to it.

Puddling Steel Rails.

The Flushing and North Side Railway Company with its leased roads will have laid, by the 1st of July next, 40 miles of steel track. The rails are of puddled steel, with partly iron flanges and vertically piled.

The advantages claimed for these rails are:—perfect safety against breaking, not a single rail of this kind having been broken during twelve years' use in Germany and four years use in this country, greater strength and endurance than can be obtained from steel-capped rails.

The value of the worn-out puddled-steel rails is higher in proportion to first cost than that of cast-steel rails, or iron rails with cast-steel caps, which cannot be re-rolled, but must be recast.

The only disadvantage of the puddled-steel rails is that a percentage of them may give out in the weld after a wear about equal to that of the life of three common iron rails. This is only a disadvantage in comparison to full steel or ingot rails, which have no welds, and therefore cannot fail in the same manner. Setting aside the greater safety of the welded steel rails, the question of economy in the use of either chiefly depends on their respective first cost, on their wearing qualities, and on their market value as scrap when worn out. The solution of this question will depend more or less on the individual experience of the consumers, especially of those who have tried the different kinds of steel rails.

RAILROAD IMPROVEMENT.—A Pennsylvania engineer, named Wilder, has recently hit upon an idea which, if carried out as it deserves to be, will do much toward increasing the efficiency and enhancing the economy of railroads. It provides for the laying of two narrow gauge tracks, side by side, with a space between the inner rails equal to the ordinary gauge of four feet eight inches. Thus three possible gauges will be furnished on the same line, all of which it is proposed to use. For freight, the narrow gauge will be used at a safe rate of speed, while for passenger travel, and a high rate of speed, the broad gauge will be used, the cars being mounted on four lines of wheels. This, he contends, will prevent oscillation, thereby increasing safety. He calculates by this system, and the increased weight of engines, it will permit of a rate of speed being attained as high as a hundred miles an hour.

No doubt a greatly increased speed may be attained by such a device, but when a train of cars is made to travel a hundred miles an hour, the material of which they are constructed and their manner of construction must be somewhat modified from their present material and form.

PUDDLING BY PETROLEUM.—It is asserted by the French technical journals that the experiment of using petroleum as fuel in the puddling furnace which has been in progress in a large iron producing establishment during the past three months, has proved itself to be very successful. In point of convenience, efficiency and in the superior quality of the iron produced, it is asserted that petroleum affords the best fuel that has yet been employed.

Burnt Iron and Steel.

W. M. Williams has given the result of some inquiries into the causes of this phenomenon, to the Chemical Society of London. After some remarks upon the physical characteristics of iron and steel so damaged, he asserts that he found in all the samples of burnt iron which he has subjected to examination, particles of black oxide more or less abundantly distributed throughout the mass. These are, however, absent in burnt steel. The method which he suggests of quickly detecting such damage, is to take a small quantity of fresh borings or filings from the subjected metal, cover them with diluted nitric acid. As the iron dissolves, the free oxide separates and remains suspended in the liquid, rendering it dark in color. These particles shortly disappear, and are thus to be distinguished from separated carbon. No such discoloration takes place with good iron.

The cause of the burning of iron he explains as follows: As soon as the small quantity of carbon is removed from the heated mass by oxidation, this process extends to the iron itself—not only upon the surface, but into the interior. The higher the temperature, and the longer the exposure, the greater is the quantity of carbon necessary to protect the iron. The best iron is that in which carbon is brought to the lowest possible proportion, without oxidation of the iron.

Burnt steel the author considers to be steel which has, by reheating, lost some of its carbon by oxidation, and by sudden solidification has had the resulting carbonic oxide imprisoned in the interior of its mass. The well known permeability of iron for certain gases renders such a process not difficult to understand.

The structure and properties of "burnt iron and steel," are therefore "caused by the presence of intermingled particles of combustion products breaking the continuity of the metal. The carbon is burnt in the case of the burnt steel, the iron itself in the burnt iron.

THE TURBINE PROPELLER.—As a gun recoils when fired, or as the progress of a rocket is kept up by the recoil arising from the efflux of the gases generated by the ignition of the composition with which the rocket is filled, so the progress of a vessel driven by the turbine propeller is kept up by the recoil arising from the efflux in a sternward direction of a stream of water, kept up by the action of a centrifugal pump or turbine, driven by a steam engine, drawing water from the sea and discharging it sternwards, in a continuous stream, through a bent pipe or nozzle, at a high velocity.

The turbine propeller was invented some years ago, and attracted sufficient attention to secure a competitive trial by the British Government in 1867, with screw propellers. Although the turbine did not equal (although not much behind) the screw, yet its performance at so early a stage cannot but be considered as very promising. Mr. A. Murray has lately brought up the subject again in the *Jour. R. U. S. I.*, and urges further trials and investigations. It is claimed that the turbine affords a higher per cent. of utilized power than the paddle or screw, which last, all admit, lose a large amount of power, say 40 to 50 per cent. at least, while centrifugal pumps of 40 to 50 horsepower, for raising water, have been found to utilize even as high as 80 per cent., varying from that down to 50. But to determine this point satisfactorily further experiments are needed.

Other points of superiority over the screw or paddle wheel claimed for the turbine are: the power of rapidly stopping the way of a vessel; great power over a heavy leak; freedom from the chance of internal injury or of fouling; utility when the vessel is being driven by sails at the rate of 10 knots or more, (when the paddle or screw would be of little or no service,) thus obtaining a greater speed than ever yet realized on the ocean; assistance rendered to the vessel's stowage; not being affected by the pitching or rolling of the vessel; non-interference with any desired form of the ship for insuring good sailing properties; facility of bringing into action or discontinuing its use, etc.

PRESSURE IN STEAM BOILERS.—The question as to whether the pressure in a steam boiler was equal or different at top and bottom, concerning which their seems to be some difference of opinion amongst engineers—though it is difficult, from the simplicity of the facts involved in considering the question, to see how a difference of opinion should exist—has nevertheless been experimentally determined by the Messrs. Hunter, at their establishment in this city. An elbow was attached to the end of the blow-off pipe which entered the mud-drum; into this a plug was screwed, and tapped to receive a half-inch pipe; to this a steam gauge was attached and the cock opened. On comparing the indications of the gauges attached at top of boiler and to the top of drum, as above described, it was found that the pressure was greatest at the bottom, by a pound and a half, proving, as might readily have been predicted, that the pressure upon the bottom of a boiler is equal to the steam pressure indicated above, plus the weight of a water column equal in height to the difference in level between drum and surface of water in boiler, and in diameter to that acting on the gauge.—*Jour. Franklin Institute*.

Up to 1870 there were seventeen steel works in Great Britain. There are now nine steel-rail mills in the United States, while two others are building at Chicago and Springfield, Ill., and four others are projected at St. Louis, Milwaukee, Omaha, and two on the line of the Pacific Railroad.

FARMERS IN COUNCIL.

San Joaquin Farmers' Club.

Labor Exchange Taxed.

The San Joaquin Farmers' Club met at the rooms of the organization last Saturday afternoon, at one o'clock in regular session.

Mr. Phelps, a member of the Committee on Labor Exchange, stated to the Club that he understood the agent of the Exchange had been called upon to pay a license. Mr. Kohlberg, the agent, said that Mr. Parker, the Deputy County Treasurer, had notified him that a license of sixteen dollars per quarter would be required from the Labor Exchange. He stated that he could not afford to pay such license himself. Considerable discussion was had in relation to the Labor Exchange, Messrs. Sperry, Brannock, Hitchcock, Phelps, Fairchild and Walshall participating. The general opinion, as manifested in the arguments was that the Exchange ought to be patronized—certainly by the members of the club. The amount of the license required, sixteen dollars, was made up by members of the club and paid over, Messrs. Hitchcock and Phelps stating that each were willing to be one of eight persons to pay the license for the quarter. The Committees on Threshers, and damage to crops, asked further time to report, which was granted.

Taxation and Equalization.

The Committee on Taxation reported that they had held a consultation with the County Assessor. Mr. Phelps thought that the State Board of Equalization had nothing whatever to do with the Assessor's duties in fixing the value of property—the latter was an independent officer. Mr. Hitchcock moved the appointment of a permanent committee of seven to examine the assessment roll of the county, and see that the assessments were properly equalized through the entire county. The motion was carried, and the following named gentlemen appointed said committee: John R. W. Hitchcock, John L. Beecher, L. H. Brannock, Andrew Wolf, James Smyth, Dr. Holden and Captain Thomas E. Ketchum. Mr. Brannock moved to appoint a committee of three to attend the meeting of the State Board of Equalization, to be held at Sacramento, July 1st. The motion was carried, and the announcement of said committee reserved until next Saturday.

Thick or Thin Sowing.

The question of the day, "Thick or Thin Sowing," was taken up and discussed quite at length. Dr. Holden said that with him, thick sowing had invariably proved best. Mr. Hitchcock took the opposite ground. He once raised four hundred and ninety bushels of wheat from five hundred pounds of seed, having sown not more than five pounds to the acre. He had sown at the rate of twenty-five pounds per acre this year, but he thought that about ten pounds would be about the right quantity on sandy soil, if the land was clean. Mr. Brannock said he thought that about one hundred pounds was the proper quantity per acre on black, or adobe land. Mr. Beecher thought the condition of the soil made a great difference. Mr. Phelps said land rich in plant food would stand more seed than poor land. He had sown as much as one hundred and fifty pounds of seed to the acre, and had raised seventy-five bushels—the best crop he ever procured. This year he had sown thirty-five pounds, and he did not have a very good stand of wheat. He thought that forty pounds, if planted with the drilling machine, was about the right quantity for adobe land. Captain Ketchum thought light sowing decidedly the best, but like Mr. Beecher, he was of the opinion that the condition had much to do with the matter. Thinly sown wheat was always heavily headed and stout straw. He presumed, in cases where large quantities of land were sown, much of the seed was destroyed by worms and by rotting in the ground, hence the use of lime to prevent the destruction of the seed by worms. Mr. Kerriek thought lime was good for preventing worms from destroying the seed, and also affording a warm coating that prevented the cold rains, that fell before the seed sprouted, from rotting the grain. Mr. Sperry concurred with Mr. Kerriek, and said he had always a better stand of grain on land where he used lime.

The Vibrator Thresher.

Mr. Sperry, agent for the "Vibrator" threshing machine, speaking in reference to the discussion on machinery at the meeting held the previous Saturday, said that he would take a "Vibrator" to any trial at his own expense, and would likewise take a road steamer and furnish steam for any other machines at that trial, free of charge. Mr. Nichols, one of the manufacturers of the "Vibrator" has sent word to Mr. Perry that he was in California for business, and wished to see the machines tested before his return to his manufactory at Battle Creek, Michigan; but he did not wish to test the "Vibrator" for any premium, but merely wanted the opportunity of threshing the grain over again after other machines. Mr. Kerriek moved that a committee of five or seven be appointed to travel throughout the county and view and examine the different machines and report to the Club. Mr. Phelps thought the objection to that would be, that the machines would not be crowded; he thought that the machines ought to be brought together at a given time and tested. Mr. Kerriek stated that Mr. Nichols would not object to paying the expense of such a committee for an entire week. Mr.

Brannock moved that a committee of three be appointed to visit different parts of the county and examine the working of threshing machines. No action taken. Mr. Sperry invited the members of the Club to witness the "Vibrator" in operation in Stockton, next Saturday.

San Jose Farmers' Club and Protective Association.

Railroad Stock Controversy.

The Farmers' Club met last Saturday, with a large attendance. The calling of the meeting to order was the signal for an immediate onslaught on the editor of the *Argus* for publishing the following in his last issue, in relation to the Club:

"The Farmers' Club, at their meeting on Saturday last, discussed the recent sale of the county's stock in the Western Pacific Railroad Company, and one of the speakers denounced the transaction as 'a conspiracy and a fraud.'"

"We are the least bit apprehensive that some members of the Club talk occasionally for the pleasure of hearing themselves, when they might be more profitably employed in pulling the weeds out of their grain fields or mending their dilapidated fences."

W. H. Ware said that the words used in the article in reference to the Western Pacific Railroad was not the sentiment of the entire Club, and that the editor of the *Argus* must have been short of matter when he indited the article.

Ben. Casey remarked that the sale of the stock was not a fair transaction, and the general opinion of the club was against it.

M. Caldwell thought that when the people voted directly against the sale, there was something wrong when the stock was afterwards disposed of.

Cary Peebles thought the Legislature had no right to confirm the sale.

About Investigation.

J. F. Holloway said the investigation of the subject was a right move, for it was something that all were interested in. How are we met? continued the speaker; we are denounced and brow-beaten by one of the leading newspapers in the city. The object of the publication was to deter us from pursuing the investigation. Where was the impropriety of appointing a committee to investigate? Does honest, fair, square dealing ever shrink from an investigation? Mr. Holloway did not believe that the denunciatory article in the *Argus* was inspired by the editor—that was preposterous. He believed that the member of the Club who made the remarks alluded to was justified in so doing. Elect a man to office and he becomes the feed counsel against the people. As men we owe it to ourselves to prosecute this inquiry, and with vigor; and if necessary, we had better pay something to further the investigation. If the board of Supervisors were overreached in the sale, then their ignorance should be exposed. It is our privilege and duty to call the officials to account. We may expect opposition, but we will come out all right in the end. We must see where our taxes are going, as well as see to our weeds and fences.

Du Bois offered the following resolution:—"Resolved, That the language contained in the *Argus* of to-day in relation to words used by a member of this Club is uttered in bad taste, and while we hold ourselves in readiness to hoe weeds we also hold it as our duty to hoe out corruption of men in office, and all other attempts upon our rights."

A discussion here arose, the majority of the farmers holding the *Argus'* insult was not worthy of the notice of the organization. A vote was taken and the resolution was lost.

Grain Sack Monopoly.

Robert Thompson, who was appointed as a Committee to find out the price of grain sacks in Europe reported that he had not telegraphed to England on account of the high rates charged. He had been to San Francisco, and discovered that the price of stocks last Fall in Europe was 8 to 10 cents per yard. The freight from Liverpool to San Francisco was \$45 per ton; Insurance and Commissions, \$5; Custom House, etc., \$8; duties, \$25; making \$83 in all per ton, which would bring the cost of the sacks to 16 cents, delivered in San Francisco.

Holloway denounced the grain sack monopoly, and moved the Committee be granted further time to prosecute the enquiry. Carried.

Means of Conveyance.

The regular subject for discussion, "The conveyance route from San Jose to San Francisco, via Alviso," was then taken up.

Cary Peebles thought the benefits derived from the present steamboat line were only temporary. What the farmers wanted was a permanent line, and a Railroad from San Francisco to deep water at Alviso. Had the farmers seen the propriety of constructing the road last year, it would have been of immense benefit to them; \$1.50 could be saved on every ton of grain sent by the proposed route.

Oliver Cottle thought a line of steamboats to operate in the bay should be secured. The railroad was not so much of an object, for the grain could be hauled in wagons to Alviso and there stored.

W. H. Ware was not in favor of paying 30 cents per ton for storage in the Alviso warehouse, and favored the building of a railroad by way of Santa Clara, so that the farmers in this section would be all benefited alike.

Du Bois concurred in the idea of building the railroad, and his idea was for the road to be built as a private enterprise, and in order

to prevent its being gobbled up by the Central Pacific let the owners of the road obtain the signatures of a sufficient number of citizens who will bind themselves to patronize the road. On the other hand the owners will secure their patrons by mortgaging the road to them. Then the agreement will be kept by both parties. The owners also will bind themselves in the same bargain to take freight at a certain rate for a stipulated length of time.

L. F. Chipman would like to see farmers build the road.

Oliver Cottle thought the road, unless an arrangement could be made that would be binding, would be owned in a short time by the Central Pacific.

L. H. Holloway said he had lately been to San Francisco, and in talking with many merchants, found that they were greatly astonished because the road had not been built. It would prove a great blessing. We have only eight miles to build, and yet we stand with our hands in our pockets and allow the monopoly to take our money.

J. F. Holloway thought the road could be built with a large amount of capital. If the people understood that the thing will be managed on the square, and that we can hold it against the monopolists that are bearing us down, they would not be backward in sustaining us.

On motion a Committee consisting of J. F. Holloway, Eekson, Peebles and Ware, was appointed to look into the matter and make an early report.

A Committee was also appointed to investigate the sale of the railroad stock.

Important Correspondence—Help for Our Silk Growers.

Our associate Editor, I. N. Hoag, has just received from the American Consul at Zurich, Switzerland, the following correspondence which will be read with interest by our silk growers, and all others interested in the general prosperity of the State. We publish both letters in full, they explain themselves and show the interest that is being waked up in the silk districts of Europe in the success of silk industry in California.

[From S. H. M. BYERS, U. S. Consul, to the Directors of the Silk Bank of Milan.]

U. S. CONSULATE, }
ZURICH, April 22, 1872. }

DEAR SIR:—Recently while visiting the city of Milan, Italy, I had the pleasure of a conversation with the Directors of the Silk Bank lately established there, relative to the importing into Italy of California cocoons, or raw silks.

Since my return to Zurich I received from the Company a letter, a copy of which I enclose. The letter explains itself, but I will add that the Company composing this silk bank are of the most respectable and worthy raw silk dealers in Italy, and represent in their bank unlimited means. By their letter and by their remarks to me personally, I am convinced that they mean business, and are willing to aid California in developing what might easily prove one of her greatest and most profitable industries.

Milan has been, is and will be, from pure necessity, one of the great centers of the raw silk trade of the world, and why then should not California profit by the opportunity offered by this bank, and reap the advantages to be gained by a steady and profitable market for the cocoons or cheap reeling for her own account?

Lombardy almost does the reeling for Europe, and the prices paid workmen in the business here, when compared with those paid in California, are little less than in the proportion of francs to dollars.

The intention of the bank, as I understand, is to make, by use of their large means and experience, Milan still more of a centre of the raw silk trade, and to encourage the development of the silk industry wherever their efforts may be seconded in the way of directing an interest in the trade to their house. Their business, like their opportunities, bids fair to be enormous, and I believe if they meet with encouragement a branch house will be established in California. Of course they must have a fair opportunity of testing the California cocoons before taking further steps in the matter, and my advice would be that some of you, or a number perhaps combined, should consult about the matter in a quiet way, and send at once the amount of cocoons suggested by the Company's letter, to be reeled and reported on. Whatever is done should be done in time to complete the reelings soon, and be prepared for the next year's operations.

Feeling interested in anything that tends to benefit the trade and industry of our country, I shall take pleasure in receiving your reply to this and presenting it personally to the Italian Company.

I send copies of this to Messrs. Wm. M. Haynie, Sacramento; Louis Prevost, San José; Mr. Garey, Los Angeles; each of whom I address because, like yourself, they are interested in the growing of cocoons, and I will be glad should the matter receive your prompt attention and reply. The requested samples of cocoons should be sent direct to the Silk Bank, at Milan, Italy.

I will be obliged to you for any information you can give me relative to present prospects of cocoon growing in the State, especially as to the number of mulberry trees growing in the

State, and the amount of cocoons produced in the last year. I am, sir, with regard, Yours truly, S. H. W. BYERS.

U. S. Consul, Zurich, Switzerland.

[REPLY.]

MILAN, April, 1872.

S. H. M. BYERS, Esq., U. S. Consul, Zurich.—DEAR SIR:—Referring to the conversation we had together when you favored us with your visit, we beg to confirm to you our readiness to assist you in every way in the attainment of the great object you have in view; namely, to develop the production of cocoons or of raw silk in your country, and particularly in California.

Lombardy, of which Milan is the center, does not grow sufficient cocoons to feed her numerous and large reeling establishments; we therefore look to abroad for the additional supply of cocoons. We also import a very large quantity of foreign reeled raw silk to supply our immense throwing establishments, which we may say work for the whole of Europe. We can therefore take either the cocoons or the raw silk, as it suits your people.

Our Bank is especially established with very large means for the purpose of developing our connection with abroad. We shall therefore be pleased if your ideas can be realized, and to take the matter in hand so as either to receive consignments under advance, or to reel cocoons for American account or otherwise, or to pass your orders, or to go into joint account operations; for the latter we would place the necessary capital at the disposal of whom it may concern with one of the No. 1 San Francisco bankers.

Of course before going into the matter in this way we wish to see what your large land owners produce, and if they will send us specimens, say no less than 800 pounds per district (in the dried state) we will then get such samples reeled at one of our best filatures, and report thereon, using such result as basis of our operations for next season—1873.

If your friends wish it we will then give them our views as to the best way of rearing silk worms in this country, of killing the worms, drying the cocoons, etc., and are also ready to send out persons well up in every branch of the said operations to guide and instruct or superintend.

In fact we place ourselves altogether at your disposal, trusting that the result may be the opening out of a great and good trade between the two countries. We remain, Dear Sir, yours truly, F. FORNERO, Managing Director.

G. FORLÀ, Chairman of Banco Sete Lombardo.

Niles Station Bridge.

The Board of Supervisors of Alameda county have contracted with the Pacific Bridge Company, to erect a bridge of three spans, of 183½ feet each, over the Alameda Creek, near Niles Station. The superstructure is to be a Smith Truss, with roadway eighteen feet in the clear, and built entirely of wood preserved by the Pacific Wood Preserving Company.

The piers are to be of cast iron, filled with concrete and sunk to bed rock, or a solid foundation.

They are constructed on the plan introduced by the Pacific Bridge Company last year, and seem especially adapted to the rapid current and drift they will have to resist at the mouth of the Alameda Cañon, where they are to be placed.

The Pacific Bridge Company now dress all timber used in the framework of their bridges. They have just shipped a bridge to be erected over Hovias Creek, in San Mateo county, and will soon ship one of 150 feet in length, to span a creek in Sonoma county, both of the Smith Truss patent.

The bridge over Alameda Creek is to be completed by the 11th day of August. The Howe Truss, Burr Truss and Pratt's Truss were all competing plans but the Smith Truss was preferred.

REARING CALVES FOR THE MARKET.—In England, says an exchange, where great care is taken to have good meat, the calves are permitted to have but little milk for the first few days after birth, as an excess of this article has an injurious effect. Afterwards, however, they are allowed a large amount, often that of several cows. They are kept in the stall, where small pieces of chalk are given them, the idea being that this substance combines with the acid from the excess of milk, and prevents its injurious influence. The butchers near London affirm that calves treated in this manner grow fat more quickly and give a better meat than those otherwise treated.

LOS ANGELES.—We learn that the last of the orange and lemon crop for the season, is being sent forward. Lake Vineyard, Sunny-side, and nearly all the larger orchards of the county, will have completed their shipments, or nearly so, by the first of June. The sales of the season have been very large, and prices remunerative.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

News, May 18: **PLENTIFUL YEAR.**—This year seems full of promise. The crops will probably exceed that of any other year in the history of the State. The mines of California and Nevada are unusually prolific, and many millions will be added to the commonwealth. From all our interior exchanges we have assurance that the vintage of this season will be abundant, and that, notwithstanding the cold winter, the wool clip will be unusually large. Reports of these cheerful facts will go to the Eastern States, and thence to Europe, and we may reasonably expect an increased immigration next year.

S. F. Chronicle: We were yesterday shown some magnificent specimens of barley, from a field of seventy-five acres, on the farm of John Amos, just below Moore's Landing, near the Point of Timber, Alameda county. The straws were over four feet in length, and the heads about the finest specimens we ever saw. Mr. Amos' ranch is in the "starvation district," in which the crops were total failures last year and the year before. This field was sown on the 15th of February last and is nearly ready for harvesting. The crops in that vicinity this year promise to be as fine as ever grown in the State.

BUTTE.

Appeal, May 16: **BUTTE COUNTY HARVEST.**—In conversation with well known farmers of Butte county, yesterday, we learned that the harvest will not come up to a good average in that county this season. The winter has been too wet, and consequently there was too much grain planted later. The soil being thoroughly saturated with water, and the spring cold and backward; the late crops had but a slight start when the north wind set in and encrusted the surface soil, checking, to a great extent, the growth of the crops. As the soil was wet and cold, the roots of the grain naturally kept near the surface, where the soil was warm and comparatively free from water, and when the north wind set in, the top of the soil was at once seared or baked, checking the growth of the grain at once. Had the ground been plowed deeper, or subsoiled, this result could have been avoided. The surplus water would have settled to the bottom of the furrow, and finding untrod ground below would have settled much deeper. The soil would have been warmed to a greater depth and the young roots would have taken a downward in place of a surface growth. Then, when the north wind seared and baked the surface soil, the roots being below it would have found ample moisture on which to draw for nourishment. And as the natural tendency of all moisture in the soil is to ascend, in warm weather, the growing grain would have been at no time deprived of the needed support, but continued to improve during the period of bad weather referred to. But owing to the shallow, surface system of plowing in vogue, the reverse was the case, and the late planted grain languished, when a vigorous growth was most needed. Butte county is not alone in this respect. From various localities we hear of the backward state of the late planted crops wherever the north wind has prevailed. From this reason alone we can safely calculate on a vast reduction of the harvest from the estimates made thirty days ago, and this reduction, in most cases, can be traced to shallow plowing.

NAPA.

Reporter, May 18: **OUR CROPS**, judging from observation during a hurried trip up the valley, and from reports gathered from all parts of the country, will not be an average. Much of the late sown grain is looking bad, and has by no means been benefited by the late north winds. The corn crop will doubtless be much above the ordinary yield. Hay will be scarce, and first-class quality rare. In Berryessa, the prospects are fair, yes, excellent. The yield of wheat and barley will be larger than usual, and hay will be good. Many parties are already busy cutting hay. The frost scare has about passed away. Those who imagined their entire grape crop lost, are feeling better. If the mildew does not assist the frost in seconding the temperance movement, we shall be disappointed if our various wine makers quarrel about a light grape crop. Present prospects are that we shall have a larger yield than in any previous year.

The vine cliff vineyard, near Yountville, over which Mr. G. S. Burrage exercises

proprietary sway, is undoubtedly one among the best vineyards in our county. Mr. B. selected a hillside for his vineyard, the most unpropitious imaginable—steep, rocky and covered with underbrush. By dint of a vast amount of hard labor he has cleared the stones away, and has fully tried the experiment of producing grapes on such lands—lands, which for any other purpose than grape raising, must be considered waste; and the result has been so satisfactory that he would not, for grape-growing purposes, exchange his hillside for the best bottom land in the valley. The quality of his grapes, and the aroma of the wine produced therefrom, amply repay for the extra labor of placing the land in good condition for cultivation. The wine cellar, built in an excavation into the hillside, is always dry, and the temperature even; and competent judges assure us that the quality of wine contained therein can not be excelled anywhere in the State. Mr. B. has labored long and hard, and been at much expense, and we are glad to note that his prospects for success are so flattering.

NEVADA.

Truckee Republican, May 11: In place of agricultural notes from Truckee, near the summit of the Sierras, we substitute the following: **LACK OF LABORING MEN.**—There is a scarcity of laboring men in Truckee. Business men inform us that it is difficult to find teamsters, or men to do any kind of labor out of doors requiring active physical exertion.

MACHINERY ARRIVED.—The steam engine, boiler, and other machinery for McFarland's new sawmill in Martis Valley has arrived from San Francisco. The mill will probably be in running order in two or three weeks.

TAHOE.—A Tahoe correspondent gives us the following items from that region: The snow is rapidly going off between Truckee and the lake. Parties are at work on the road, and expect in a day or two to have it open for stage travel.

The view from Tahoe city is beautiful now, the snow being all off along the north shore of the lake.

Lumbermen, fishermen and others who spend their Summers around the lake are gathering in.

The Von Schmidt dam at the outlet of the lake stands well, and is a good piece of work. It has raised the water about one and one-half feet, and by the time the snows melt it will probably be filled five feet above low-water mark.

Fish do not show very plenty on the north side of the lake, but are said to be quite plenty on the south.

SAN DIEGO.

Bulletin, May 11: **BRIMSTONE.**—Geo. Treanor returned from the lower country on Friday evening, where he has been to take a look at the sulphur mines. He went first to San Rafael; from there across the mountains to the Colorado river about 100 miles. On the mountains about midway between San Rafael and Colorado river, he passed a fine strip of country, about fifteen miles wide, covered with pine trees from one to four feet through. He saw many small and beautiful valleys. The sulphur deposit is about ten miles from the river, in a broken, desert country. There is a mountain of sulphur. In one place it will average 75 per cent. One of the gentlemen is an old sulphur miner, and he declares it is the finest deposit he ever saw, and there are millions of tons of it. Arrangements are being completed for working the mine, and within thirty days fifty men will be at work on it. The ore will be hauled in wagons to the river, and put on boats and taken to San Francisco to be retorted.

SAN JOAQUIN.

Independent, May 18: The accounts received from farmers residing in various portions of this valley are much more favorable than they were two weeks ago. While the yield of wheat will fall far below the amount anticipated early in the season, the later rains had a most beneficial effect, and fields of grain which at one time looked very unpromising, have improved very rapidly, and with the exception of some of the latest sown, and that upon the sandy soil ruined by the strong north winds, the farmers now expect a fair yield of grain. We hear some complaint from farmers upon the moist lands of this county that their wheat crop will be a failure, yet they will obtain a fine crop of hay, which will in a measure make up for the loss.

Several farmers residing on the Calaveras bottoms, report that their fields of wheat, which looked promising first of the season, will not produce hardly a head, but that in place of the wheat they will cut a large crop of herdsgrass to

which the wheat has apparently changed.

THE FOUNDRIES.—The extraordinary demand for harvesting machinery is keeping both the foundries in this city unusually active, early and late. Haines' Headers are being changed from the double to the Baxter or single gearing. Some sixty machines have already underwent the required alterations and about forty are on hand to be changed. In addition to these some thirty new machines have been manufactured this season. The men are kept at work until 10 o'clock P. M., daily.

SAN LUIS OBISPO.

Tribune, May 18: **PRODUCTIVE.**—Last Monday, Mr. C. C. Oakley left at our office a stool of barley, containing by actual count, 150 well-headed stalks, three feet and eight inches in height; all of which were the productions of a single grain. This extraordinary bunch of grain was grown by Mr. O. on his ranch in the Santa Maria Valley, who has several acres, which will soon be ready for harvesting, of which the sample is a fair average. We are informed by him that both wheat and barley crops, from present indications, promise an abundant yield throughout the whole valley. He says grasshoppers, which were very troublesome last season in the above-named valley, and in different portions of the southern part of this county, have again made their appearance in countless millions, but thinks that the grain crops are too far advanced to be materially damaged by these pestiferous insects.

GRIDLEY'S.—The farmers about Gridley's Station are engaged in securing their hay crop, which is unusually heavy. The grain crop is looking remarkably well, and the farmers are anticipating a bounteous harvest.

SOLANO.

Chronicle, May 18: **THE PROSPECTS OF CROPS.**—A. T. Robinson, a farmer who owns a large ranch in Yolo county, was interviewed by our reporter on Monday, in view of the fact that he is a very intelligent observer, and has recently made a jaunt through the counties to the northward with the especial object of gathering information in regard to the crops. He states that in the northern part of Solano county, and from thence through Yolo and Colusa counties the late-sown grain generally will be a failure. It ranges from six to eight inches in height, and has already commenced heading out. On early sown and summer fallowed lands the prospects are very good for an average yield. More weeds are noticeable the present season than at any prior time. For the past six weeks the north winds have blown almost uninterruptedly, and the effect has been to exhaust the moisture and bake the surface soil so rapidly that the roots of vegetation could never succeed in getting to the moist layer of earth underneath. He learns from San Joaquin valley correspondents that a similar condition of affairs exists there, and it is very generally conceded that late-sown grain will not be worth cutting. A friend of his mentions having traveled through a field of 1,000 acres, for the crop of which he would not give ten cents. The hay crop will also be scanty and short. Mr. Robinson, from his own observation and from the information at his command expresses the opinion that the yield of grain this season will be less to the acreage than at any time within his memory, although from the greater breadth of ground sown the aggregate crop will still be immense.

TULARE.

Drouth.—*Visalia Delta*, May 16: Mr. C. R. Roland, of Outside Creek, informs us that the late sown grain will be a failure, except for hay, owing to the want of rain late in the season. He would have had a very fine crop but for this. He loses the crop on 114 acres.

SNAKES.—Mr. Smith, of Squaw Valley, has showed us a rattlesnake's carcass 47½ inches long. It had eleven rattles. Mr. Pratt, of Oak Grove, caught a blacksnake in bed with one of his Brahman hens. It had swallowed an egg whole, and was trying to swallow another.

PLANO.—*Cor. same*, May 3: *Mr. Editor*: If you come in this part give us a call just to see that the best part of Tulare county is still open to settlers, so you can tell them where to go when they come along looking for a home. Our grain is good, though the land was not plowed last year, only 25 pounds of seed to the acre was drilled in. The late Eugenia pea will be in your market next week, on the 9th; also hard-headed cabbage, grown by the aid of a water lifter, which gives us a supply of pure sweet water from a well 85 ft. deep at reasonable expense, and no danger

of failure by the river drying up, as it did last year.

The advantages of the plains over the low country and river bottoms are many and important. Here the first consideration of good health is completely answered, there being no malaria or other cause of disease. We came here sick in search of health, and have found it. The exemption from frost is another advantage we have, as you will see tomatoes, potatoes, beans, etc., in vigorous growth, and grape vines that have made three feet growth from the ground this spring. Earliness being also an object with us; peas were fit for market March 6th; tomatoes are now over an inch in diameter, snap beans 2 inches long, pinkeye potatoes ripening.

Mr. Gibbons' peach orchard, only on the edge of the plains, was not hurt by the late severe frosts.

PAYING CROP.—On a ranch near Plano is a large field of potatoes; the hills are three feet apart, and will yield two pounds each—total, per acre, 8,700 pounds. They are now being brought to market and sold at five cents per pound, which makes the return per acre some \$455.

YOLO.

Mail, May 18: **PREPARING FOR BUSINESS.** Woodland is attracting quite a number of enterprising business men just now. The prospects are good for fine crops and men with an eye to the "main thing," see in the coming harvest and the years to follow a rare chance to invest in the opportunity presented. Not alone are strangers exhibiting a desire to move forward, but old citizens are beginning to build and branch out in order to catch the wind from every direction except the north. The prospects look encouraging, and every one seems to be enjoying a season of relief in "great expectations." We expect to find our town two years hence with a population double that it now has, and all branches of business enlarged and multiplied. It has always been called a *fast* place in a business way, and we do not think it will "go back" on the good name it has heretofore borne.

OREGON.

Mountaineer, May 11: The Columbia river is higher now at this point than it has been at any time before this year. It is probably twenty feet above low water mark. There is still about thirty feet to go on before any damage will be done to the residents of this city. Many of our citizens prophesy that the Columbia will be as high as it was last year; but we don't think so, as the river has been carrying more water this spring to the ocean than it did last and therefore when the hot days of June come, there will not be as much snow to melt, the greater portion will already have gone. At least that is what we wish.

Mr. James Clark, of Grant county, gave us a call during the fore part of the week. From him we learn that the crops in John Day valley are not looking very well and that they were much in need of rain. The grass was excellent and live stock of all kinds are doing well. During the middle of April the weather turned cold and destroyed nearly the entire fruit crop. The coldest day of the winter was on the 14th or 15th day of March. The miners were having plenty of water and were meeting with general good success.

From Mr. B. D. Butler who has recently returned from his sheep ranch in the Klickitat valley, we learn that his band of Angora goats are doing exceedingly well. The climate of the Klickitat seems to be expressly adapted to these animals. He has a band of sixty head all well and in good condition. This spring's kids appear to be much larger and the fleece finer than the kids which were brought up from California last spring. In course of time we have no doubt but that the Angora or Cashmere goat will become a profitable investment in this region of country. We have a specimen of the wool on exhibition in our office that is over twelve inches long and as fine as silk, taken from the back of Mr. Butler's full-blooded buck this spring.

Willamette Farmer: **THE CANAL AND LOCKS.**—Mr. Jos. Teal informs us that there are now 200 men at work on the canal and locks at Oregon City. He also assures us that the locks will be completed and ready for boats to pass through by the first of January, 1873. He says he is willing that the State should become owner of this improvement by the payment of the actual cost of its construction. We are willing to see the State pay considerably more than cost, rather than see it go into the hands of a monopoly, to be used in oppressing the people.

Pacific Coast Products, and Their Future Market.

[By PROF. F. S. CARR—Written specially for the PACIFIC COAST MERCANTILE DIRECTOR.]

California, with but little more than 500,000 inhabitants, or one and one-half per cent. of the National population, ranking in this respect as the twenty-fourth State in the Union, in the amount paid to the support of the government as *income tax*, ranks as the fourth. The assessed value of property owned in 1870, was: real estate, \$176,527,180; personal, \$93,116,908. Total, \$269,644,088. On an actual value of \$394,517,784 real, \$234,270,233 personal, or a total of \$628,788,017.

In estimating the prospective development of California we must add to the factors natural wealth, population and property—what carefully gathered facts show concerning the variety of her industries, and the characteristics of her people.

What is California Producing?

Answering this question as briefly as possible, and somewhat retrospectively, we have first, *gold*, of which in the last twenty-five years she has produced more than all the rest of the world. Though it is estimated that seven-eighths of the gold now in use in the country has come from her mines, these vast tributaries to the world's progress are by no means exhausted.

The actual decline in the gold product, and the depreciation of the value of mining property is owing to the discovery of valuable deposits of treasure in neighboring States, which have attracted the roving mining population, and to the diversion of labor and capital into other channels, rather than to impoverishment. The value of the gold produced in California in the year 1870, as reported by the leading newspapers, was \$23,000,000; of silver, (exclusive of that counted as part of the gold yield), \$1,000,000; of quicksilver, \$1,500,000; of coal, \$1,000,000; miscellaneous minerals, \$500,000, making an aggregate of \$27,000,000, or fifteen per cent. of the total annual value of the Industrial products of the State. Besides this we exported ores, which ought to have been *smelted here*, to the value of \$1,064,671. The export of treasure this year, for the quarter ending April 1st, exceeds that of last year by a million of dollars, not including any of that which goes east by rail directly from the mines.

Total for 1871.....	\$3,979,278.19
Add duties, net.....	1,528,864.48
Net.....	\$5,508,142.67
Total for 1872.....	\$4,893,684.02
Add duties, net.....	1,137,610.01
Net.....	\$6,031,494.03

This treasure finds its market as follows:

China.....	\$1,747,246.00
Central American Ports.....	196,223.09
England.....	878,640.31
Japan.....	1,337,757.43
New York.....	1,052,816.19
Peru.....	500,000.00
Mexico.....	10,000.00
East Indies.....	170,000.00

The Japanese Government which took only \$20,590 from us last year, is requiring a large amount for its mint, and will not complete its re-coining for several years to come.

The destination of the quicksilver and copper exported during the last quarter, is taken from the commercial statistics of the port of San Francisco.

Quicksilver.

	Flaska.	Value
New York.....	602	\$39,119
Mexico.....	335	21,110
Australia.....	200	13,005
China.....	6,300	84,062
Callao.....	300	19,508
Total.....	2,737	\$196,804

Copper Ore.

Great Britain.....	685	\$36,257
Increase over same quarter 1871, \$14-620.		

Forty-five per cent. of the total annual value of California's products is derived from her *agriculture*.

After a careful comparison of the report of the Federal Commission of agriculture 1868-9, with that of the State Surveyor General, and with the receipts of domestic produce at San Francisco from July 1st, 1869, to April 3d, 1870, compared with the same period of the previous harvest year, the value of these in 1870 was estimated at \$89,000,000, classed as follows:

Cereals (13,788,418 bush. at from \$1 to \$1 05 per bush.).....	\$33,080,860
Hay, (388,133 tons at \$15 per ton).....	5,821,990
Potatoes, peas, beans, and root crops.....	1,500,000
Kitchen vegetables, sweet potatoes, and all products of that class.....	5,688,270
Fruit trees and vines.....	6,250,000
Domestic animals (increase and produce of.....)	15,346,000
Improvements on farms by agricultural labor.....	20,000,000
Total.....	\$89,000,000

In the years 1868-9, there were 2,132,150 acres under cultivation, and 4,463,127 acres enclosed. In the year 1870, there was more than 1,000,000 of acres *sown to wheat*; in 1871, 1,478,891 acres, yielding 17,288,544 bushels.

The unfavorable character of the last two seasons has temporarily depressed the wheat growing interest, which during the next few years must assume enormous proportions, because it will continue to yield the largest return upon the amount of investment both in capital and unskilled labor which it employs. The available wheat lands of California now amount to five and a half millions of acres, which will without doubt be increased by reclamation, railroad facilities, etc., to 13,000,000 acres. It is a reasonable expectation that wheat growing will be developed to one-half its ultimate capacity in the next twenty years mostly by the plain farming hitherto employed which gives an average return of 17 bushels to the acre. Our best results as shown by *country statistics* fall twenty per cent. below the average yield in England. Wheat culture worthy of the name, would double these figures.

What Does this Great Staple Cost?

By careful estimates made in the San Joaquin valley, where the best facilities for culture exist, the cost of putting in and harvesting one thousand acres may be stated thus: Ploughing, \$395; sowing, \$25.60; harrowing, \$58.28; heading, \$232.38; threshing, \$220; sacks, \$1,950; hauling, \$375; machinery, \$150; seed, \$1,000. Total, \$4,406.26. A crop of twenty bushels to the acre, (which is a low estimate for that district in a good year) would give a yield of 20,000 bushels.

Mr. Moseley of Stockton estimates the wheat product of the San Joaquin valley counties as far south as Tulare for this year at 13,500,000 bushels, at an average of twelve bushels to the acre. Another estimate of twenty-three counties with the San Joaquin valley with wheat at \$1.00 per bushel and barley at 75 cents, gives the value of the two crops thus, wheat, \$28,000,000; barley, \$7,354,500. Total, \$37,054,500.

Friedlander's estimate is that we shall have 12,000,000 centals or 20,000,000 bushels of wheat for export, worth at \$1 per bushel, \$20,000,000 in cash, enough to tax our facilities for transportation to the utmost.

In the year 1870 the United States exported to foreign countries, as shown by the Annual Report on Commerce and Navigation, 36,584,115 bushels of wheat, worth \$47,171,229. Also 3,463,333 barrels of wheat flour, worth \$21,169,593.

The annexed table will show where the great markets of the world for this staple are to be found and their relative importance.

Amount of wheat and wheat flour exported from the United States in 1870, according to the Annual Report of Commerce and Navigation, is as follows:

Names of Countries.	No. Bush.	Value.	Barrels.	Value.
To Australia.....	78,898	\$82,182	62,260	\$308,007
To China, Hongkong and Singapore.....	61,805	56,395	169,991	782,557
To Japan.....	14,170	15,178	2,014	104,284
To Sandwich Islands.....	987	886	8,557	42,920
To England.....	21,779,373	28,024,785	832,800	5,160,881
To Scotland.....	2,308,290	2,052,848	27,520	1,759,439
To Ireland.....	3,629,936	5,226,061	58,623	351,668

What Does it Cost to Move this Crop.

From San Francisco to Liverpool, before the opening of the railroad, the cost was estimated at 40 cents, in gold per bushel. For the entire wheat region of the State to San Francisco it may be put at 20 cents a bushel, including hauling, warehousing, and all other expenses.

From the field to the English dock, one year with another, it costs 60 cents per bushel, and brings in that market 30 per cent. higher than any other American. The cost of transportation from Iowa to Liverpool is \$1.25 per bushel. Our wheat costs in the English market nearly the same as the best Russian, the only grain which equals it in excellence. The cost of sending our grain to China, is \$3 per ton.

Barley and Other Products.

California is the first barley-producing state in the Union. The last official report showed 696,001 acres sown, producing 9,570,321 bushels. Of other grains there were oats, 113,269 acres, producing 3,714,480 bushels; rye 3,692 acres, producing 20,795 bushels; corn, 57,364 acres, producing 1,434,317 bushels; buckwheat, 803 acres, producing 13,479 bushels. Of minor farm products, peas, 94,106 bushels; castor beans, 682,325 pounds; potatoes, 3,092,177 bushels; sweet potatoes, 173,405 bushels; peanuts, 193,304 pounds; beans 503,201 bushels. Of hay, 460,018 acres, producing 685,446 tons.

Taking the exportation for the quarter ending March 31st, 1872, as a basis, Mex-

ico is the largest foreign consumer of our barley, the Sandwich Islands and British Columbia of our oats. Both China and Japan are increasing their demand for these staples.

Hop Culture has been very profitable in California owing to failures of the crop in the Eastern States and Europe. Eastern buyers have shipped 3,000 bales overland during the past year. Japan will prove an excellent market for all the hops which we can raise.

Flax Culture has been steadily increasing with us. From the demand for flax straw for bagging purposes, 7,376 acres were planted last year producing 760,700 pounds of seed, which finds its present market in mills of San Francisco.

Beet Culture may hereafter be considered as one of our most important industries, as it will relieve an immense drain upon our resources. The average annual importation of sugar into the port of San Francisco is something more than 50,000,000 pounds, worth, duties paid, about \$5,000,000. Should the success of the Alvarado Beet Sugar Co., who manufactured one and one-quarter millions of pounds of sugar of the finest quality last year, (worth \$150,000 in San Francisco), inspire our farmers to co-operate in the production of this important luxury, we can easily retain the value of 300,000 acres of wheat which goes out of the State to purchase an article in no respect superior to our own. For this product our market is at our own door.

Dairy Products.

The late shipment east of 60,000 pounds of choice table butter is one of the most significant indications of progress in California. The produce of last year was estimated at 4,419,627 pounds of butter, and 5,488,266 pounds of cheese. One-third of this is made in Marin county. Shasta county, one of the best dairy counties in the State, is not included in the above report. There can be no doubt that dairy farming is destined to become one of the most profitable sources of wealth to the State.

The Product of Our Vineyards.

The raising of grapes and manufacture of wine and brandy has been brought to a degree of perfection, which places the present and prospective value of this industry beyond cavil. Our wines have received the highest encomiums from competent judges both in the Eastern States and in Europe, and their reputation is now beyond injury from liquor speculators, or unskilled manufacturers. They have to compete in our home market with "traveled" wines, which we are childish enough to import at a cost to ourselves of more than \$550,000 dollars, while we send one-half of our own product to the Eastern States, and our own champagne manufacturers are unable to supply the Eastern and foreign demand. Last year we produced six million gallons of wine, worth \$3,600,000, and one hundred and fifty thousand gallons of brandy worth, duties unpaid, \$112,500. This year we shall produce from eight to ten million gallons of wine, worth at least, \$4,500,000, with not less than 200,000 gallons of brandy worth \$150,000.

Our markets will be the following points, named in the order of their commercial importance: New York, (which took from one firm in the years 1871-72, 476,814 gallons, costing \$375,520), Central America, British Columbia, Russian Asia, Mexico, Japan, China, Honolulu, Liverpool, Tahiti, Australia and New Zealand.

Wool.

It was not until 1854 that the breeding of fine woolled sheep commenced in California, ever since then the quality of this product has been becoming more valuable, until at present the finest pasture ranches in the State are covered with flocks. In 1860 there were 900,000 sheep in the State, there are now 3,178,671. The census returns show that the largest proportional increase of the wool product of the country has been here, the last clip amounting to 17,565,935 pounds. Nearly all our manufactured wool finds a market in the Eastern States; its value last year amounted to \$2,000,000.

The present prospect is that our spring and fall wool clips will yield 30,000,000 pounds, and that the average value in gold will be about 40 cts. per pound, (that now coming in from the southern counties is selling at 41 cts.) making its aggregate value \$12,000,000. The fruit and grape crops promise abundantly. It has been computed that the aggregate agricultural and horticultural products of 1872, not counting beef, pork, butter and cheese, will be worth not less than \$53,000,000, of which \$35,000,000 will be exported.

According to the estimates of 1870 before referred to, our manufactures represent 40 per cent. of our productions. During that year we exported lumber, shingles and other forest products, bricks, brooms, blankets, billiard tables, glue, cigars, machinery and iron work, barrels of flour, bread and crackers, with small quantities of miscellaneous articles to the value of \$2,202,205, also fish, to the value of nearly or quite \$100,000. The product of the soap root, used as a substitute for horse hair was valued at \$100,000.

I have already exceeded the limits proposed to myself in this article. Of the United States imports for 1871 from foreign countries, \$13,099,687, went to pay for productions which California can grow and manufacture with unequalled facility. The sugar, butter, wine, raisins, starch, olive oil, tobacco, soap, imported to this State should have been produced at home. We are consuming 300,000,000 pounds of rice, with excellent rice lands undeveloped. Our ores should be reduced, our wool and leather should be manufactured here. The machinery for our mines, railroads, steamships, and the ships themselves should be made here. All these things are needed to make us the commercial centre of the Pacific countries.

Value of Tule Lands.

In the *RURAL* of May 11 we made mention of the adaptability of tule lands to the production of grasses, and the easiest mode of reclaiming such lands. On precisely the same date, the *Napa Reporter* came out with an excellent article on the same subject as follows:

There are some facts connected with reclaimed tule lands which must awake public attention. If we can judge at all by appearances at Suseol, and above and below that point, there are no such lands for dairy or pasturage on the coast. On lands of this class, leased by S. Thompson & Sons, the native grasses of the country have sprung up luxuriously, sweet and nutritious, the very best of feed for dairy purposes. Two and even three cows to the acre fail to keep down the perennial supply. The yield of milk and butter is abundant and of the best quality at all seasons.

Upon the place of Mr. V. Hathaway the same experience is repeated. He keeps a hundred head of cattle and about a hundred horses in fine condition all through the year. Above Suseol, Mr. T. H. Thompson has about 120 head of cows, yielding abundance of milk, and room enough for 150 more. There can no longer be any doubt as to the value of these lands, especially for dairy purposes.

The experiments at the Suseol orchards further show, after a three years' trial, that these lands are most admirably adapted to the cultivation of the beet and other root crops, and especially to sorghum, which here attains a rank growth unknown elsewhere. The milk and butter from these tule lands are just as rich in August and September, as elsewhere in April or May. The cost of reclamation does not exceed \$1.25 per rod, about the same as ordinary fencing. Levees are made by putting up an embankment of sods 7 feet wide and 3 high. When the winter rains come, there is nothing on the ground to be harmed. In our judgment the tule lands of California will, at no distant period, be the most valuable in all her domain.

District Agricultural Society.

A District Agricultural and Mechanical Society is proposed for the counties of Napa, Solano and Yolo counties, with Vallejo as the business center. But at a recent meeting in Suisun, it was ascertained that Yolo county had joined her interests with those of the Northern District Society, with headquarters at Marysville.

The *Napa Register* takes the following correct view of the subject; it says:

Agriculture and manufacturing are the chief interests of our section, and the safest foundations upon which to rest our hopes of future prosperity. Besides the indirect advantages of these societies in the encouragement they offer producers, they possess this other: That, organizing the interests of producers, they are protective against speculation.

To carry out the programme, in full, however, we must have a farmers' club in each of these three counties. We need one in Napa, at least. Clubs are productive of great good in other counties; they enable farmers to cultivate an acquaintance with each other, and with different parts of the county; they develop a vast amount of valuable information, and are, indirectly, sources of pecuniary profit. Who will lead off in the organization of a club?

Gas.—In 1860, there were 810 gas companies in England and Wales, 141 in Scotland and 64 in Ireland. The average price charged was \$1.80 per 1,000 cu. ft. In 1863, there were 433 gas companies in the United States, the price charged per 1,000 cu. ft., varying from \$1.50 in Pittsburg, Pa., to \$12.50 at Marysville, Cal.

STILL BURNING.—It is said several large coal-piles in Chicago have never been extinguished since the great fire.

USEFUL INFORMATION.

Ventilation—A Field for Invention.

We have made little progress in this country in the art of ventilating dwellings and public edifices. If a contract is given out for the construction of a costly house, it is as ten to one that the builder will make no provision whatever for ventilation, and if he follows his own notions he will not even secure the advantages of a good light. Now and then an architect of advanced ideas insists on ventilation and tolerable acoustic advantages for public edifices. It is estimated and we believe truthfully, that 35 per cent. of the diseases of cities are caused by improper trapping of waste pipes in houses, and of bad or altogether neglected ventilation in bed-rooms and sitting-rooms. Proximity of parlors and dining-rooms to the cold and damp ground underneath is also a prolific cause of household disease among women and children. The perfect dwelling is an invention rather of the future than of the present. It will have perfect ventilation for every room, cross lights will be avoided, the warming apparatus will be something else than close stoves, and the kitchen will be so isolated or otherwise arranged that the odors of that department will not pervade the whole house.

Sanitary considerations will have the first place, from the choosing of a site to the driving of the last nail. A house without proper drainage will be avoided as little more desirable than a pest house.

It is an open question whether the model house of the future will be furnished with gas-lights or carpets. If gas is tolerated, it will be of some standard quality, and there will be such perfect combustion that books and pictures will not be ruined. Carpets will either go by the board or the score of health, or will appear in the modified form of mats which are removed or changed every day. It may be a long way to the attainment of all these improvements. It ought not to be a long way to a perfect system of house ventilation.—*Bulletin.*

How to Make a Cheap Cellar Bottom.

In sections of the country where there is an abundance of cobble-stones, collect a few loads of them about four or five inches in diameter, grade the bottom of the cellar, lay the cobbles in rows, and ram them down one-third their thickness into the ground, so that they will not rock nor be sunk below the line of the rows by any heavy superincumbent pressure. The bottom of the cellar should be graded so that the outside will be at least two inches lower than the middle. A mistake sometimes occurs by grading the cellar bottom in such a manner that the center will be two or three inches lower than the outside. When this is the case, should water enter from the outside, it will flow directly towards the middle. A straight edged board should be placed frequently on each row of stones as they are being rammed, so that the upper sides may be in a line with each other. After the stones are laid and well rammed down place a few boards on the pavement to walk on; then making a grouting of clean sand and water lime, or Rosendale cement, and pour it on the stones until all the interstices are filled. As soon as the grouting has set, spread a layer of good cement mortar one inch thick over the top of the pavement, and trowel the surface off smoothly. In order to spread the mortar true and even on the surface, lay an inch board one foot from the wall on the surface of the pavement, stand on the board, and fill the space with mortar even with the top of the board; after which, move the board one foot, fill the space with mortar, and trowel it off smoothly. Such a floor will cost less than a board floor, and will endure as long as the superstructure is kept in repair.

A floor made in the foregoing manner on the ground in the basement of a barn, a piggery, or a stable, would be rat proof, and would be found cheaper and more serviceable than a plank floor.

A MAMMOTH AQUARIUM.—Dr. Anton Dohrn, in a letter to Professor Agassiz, writes that he has matured a plan of establishing a large laboratory for marine zoölogy in the Mediterranean. He has obtained permission of the authorities of the city of Naples to construct a large building, at his own expense, in the Villa Reale, at Naples, close to the sea containing a large aquarium of the public, and extensive rooms for naturalists of every country. Dr. Dohrn, with two or three other German zoölogists, will settle there, and conduct the administration of both the aquarium and the laboratories. He wishes information regarding this proposed laboratory to be widely extended, and earnestly invites all who may visit Naples to visit the aquarium. An annual report of the work done and the progress made at the zoölogical station will be published. A committee has already been formed to give further dignity and importance to this project, consisting of Messrs. Helmholtz, Dubois-Reymond, Huxley, Darwin, Van Beneden, etc., and, in America, Professor Agassiz.—*Once a Week.*

A FLYING DRAGON.—Among the remains discovered last year in Kansas by Professor Marsh and party were bones of the flying dragon. Professor Marsh judges that the dragons, to whom these fragments of bone belonged, must have measured, from tip to tip of their extended wings, some twenty feet.

Light, Heat, and Electricity from Motion.

The celebrated Jacob Perkins when in London, in 1837, exhibited at the Adelaide Gallery the phenomena produced by the contact of soft iron with steel in motion, which he described at the time as follows:

"The action of a soft iron disk upon hard steel, such as a file, is exhibited four times a day. This has been regularly kept up for three years, yet it has undergone very little wear. I am of opinion, in fact, that if the file had never been held upon it until it had attained its full velocity, there would not have been any loss of metal. I do not know to what extent the combustion of steel by soft iron may have been carried in the United States, but our experiments are so brilliant as to excite the highest admiration, and to induce numbers to repeat their visits to the Gallery. Our disk is a foot in diameter and an eighth of an inch thick. It requires about a three-horse power to drive it, and revolves about 6,000 times in a minute. It is very accurately fitted up with friction wheels. The blaze of light, which rises about twelve inches, perpendicularly, from the point of contact, is so vivid that few persons can look steadily at it even at noon day. The stream of light is about an inch and a half thick at the distance of a few inches from the point of contact; and at the distance of seven or eight feet, it spreads out to about ten inches. The sparks not infrequently touch the ceiling, which is about twenty feet high; a ring of fire is seen all around the disk, appearing like a band of light about five-eighths of an inch wide. Of what does this light consist? It is manifestly different from that of the sparks, which all fly off in a tangent. In operating with the disk, it never becomes warm; the file, however, has to be held at least two inches from the sharp end, as it becomes highly heated. The whole appearance, in fact, is very interesting, and when fully investigated, I am well convinced that some of the phenomena will be found to depend upon electricity."

ORIGIN OF LAGER BEER.—The German words lager beer signify stock beer—i. e., beer that has been stowed away. The story, as told in Germany is an old one, and runs thus: Many years ago, a shoemaker near Bamberg, sent his apprentice to get a bottle of Bamberg beer, which was sold at that place; but the boy not knowing this, went to the city itself. On returning he met an acquaintance of his who told him that when he would come home his boss would whip him for staying so long. The poor boy who was frightened at this, thought it better not to go home at all, but took his bottle, buried it under a tree, and ran away. He went among the soldiers, where he distinguished himself so that in a short time he became an officer. When one day his regiment was quartered in this little town, the officer thought it proper to pay a visit to his old boss, but not before he had got the bottle of beer which he had buried some years before under the tree. When he entered he said, "Well, sir, here I bring you your bottle of Bamberg beer that you sent me for." The shoemaker not knowing what this meant, was told by the officer all about it. The bottle was opened, and the beer was found to be of superior quality. When this fact was made known, some of the brewers built deep vaults, where they put their beer, and called it after it had lain some time, lager, which did not mean anything more than lying. The officer afterward married the daughter of the shoemaker, and drank a good deal of lager beer, receiving in his occupation the assistance of his father-in-law.

AN ANCIENT OF THE EARTH.—An almost entire human skeleton, fossilized, has been found in Hungary, together with a stone hammer, in a geological formation, indicating that the living man existed long before the mammoth age. The contemporaneity of man with the mastodon had before been pretty well established by discoveries in the lacustrine deposits and bone caves of Europe, including a tolerably well carved image of the mammoth on a piece of bone. All recent researches establish for man an antiquity so remote that the period in years cannot be calculated. The evidences on this score that have been accumulated in California are particularly numerous and convincing, and will astonish the world when collectively presented.

PLUMAGERY.—The most skillful use of plumagery there is any record of, seems to have been practiced in Canton, China, long before that country was well known to outside barbarians. Bird's feathers were woven into cloth which was called, in the native vernacular, goose-velvet. The foundation of the fabric was silk, into which the feathers were skillfully and ingeniously woven, on a common loom, and it seems to have made the most elegant appearing cloth for a garment ever produced. We saw a sample of it some years ago, in the hands of a missionary, who was informed that its manufacture had been discontinued many years before.

HOUSEHOLD UTENSILS OF PAPER.—In Pearl street, New York, there is a mill which makes from paper such articles as milk-pans, cups, bread-pans, wash-bowls, etc., which are said to be superior to wood or metal. The paper after being pulped, is pressed into shape, dried, enameled, and subjected to a heat that would destroy some utensils of the kind. The material is light and easily handled, and does not rust, shrink, leak or easily break.

GOOD HEALTH.

The Cause of Hunger.

When the system begins to need nutriment, it sends a fluid from every portion of the body toward the stomach, where it accumulates in little reservoirs, the distension of which causes the sensation of hunger; the fuller they become, the more hungry are we. This fluid not only gives notice that food is needed, but it has the power of dissolving it, as water dissolves sugar, and thus prepares it for yielding its nutriment to the system. If, therefore, a person eats without an appetite; without being hungry, there being none of that dissolving fluid in the stomach, the food is not dissolved, does not undergo any healthy change; on the contrary, being kept up to the stomach heat of about a hundred degrees, it soon begins to ferment, to decay, to rot; if meat, it literally becomes carion; if vegetable, it sours; in either case, generating gas and wind, causing unseemly belchings and noisome eructations, or these gases, being confined, distend the stomach, causing pressure against the nerves, originating various pains and discomforts more or less distressing, to last sometimes for hours or half a night, preventing refreshing sleep, to be followed by a day of general discomfort and unfitness for business. Sometimes the stomach becomes so distended with wind that it crowds up against the lungs, preventing them from receiving their proper amount of air, and there follows a distressing feeling of impending suffocation. These same effects follow when too much food is eaten, more than there is fluid in the stomach to dissolve.—*Dr. Hall.*

EDUCATION AND HEALTH.—It is impossible that the mass of men can be healthy, and so moral and successful, without some knowledge of their structure, and of its laws, which they must obey or suffer. How can a young woman be called educated who is ignorant of physiology, of her duties as a mother, of the divine art of nursing? How many men know anything of the relations of waste and supply in the nervous economy? Why, not one man in a hundred knows even what the stomach is made for, and the other ninety-nine are constantly transgressing rules they have never learned. We may take the old parable of the apple in the garden as an illustration of the way men's stomachs make havoc with their moral sense. Not one man in a hundred knows or suspects that God made the air to be breathed. Every part of his house may be reeking with miasma, the cellar full of all evil, the partitions clotted with dormant mischief, and he never dreams of it, but goes on nailing down his windows and listing his doors. If we could only see the air we have once breathed over! Even the architects of our public halls and theatres and churches have the crudest notions of ventilation.—*Henry Ward Beecher.*

SLEEPLESSNESS AND THE REMEDY.—The best anodyne is a liberal amount of muscular activity out of doors every day. Persons who sit around the fire and lounge on the sofa, or read or sew a great part of the day, need not expect sound sleep; only the laboring man can taste it in all its sweetness. Many fail to sleep at night because they will persist in sleeping in the day time. It is just as impossible to healthfully force more sleep on the system than the proportion of exercise requires, as to force the stomach to digest more food than the body requires. Rather than court sleep by industrious activities, many persons resort to medicine, and every new drug which is heralded as a promoter of sleep becomes at once immensely popular, even though it is known to possess dangerous qualities. Chloral hydrate has had a great run, and even young men are known to be purchasing it at the drug stores, to be used in promoting sleep; it should never be taken unless advised by the family physician, for the medical journals are constantly publishing cases where serious harm and even fatal results attend its habitual use.—*Journal of Health.*

DARK ROOMS—SUNSHINE.—Windows were originally intended to let in light and air. Modern housekeepers, however, from the mansions of the wealthy to the cabins of the very poor, vie with each other in shutting out the blessed sunshine and pure air. Windows are studiously curtained, double, dark, and very generally closed. Let the shades run up easily on rollers attached to the sash, and the sash always dropped an inch or two.

Sunlight is an element of life. It decomposes and scatters, in connection with pure air, these death seeds. When fevers are epidemic, in large cities, or in wards of hospitals, the sunless rooms and sides of streets report a much larger number of deaths than ever found where sunshine can enter, even for one hour a day. Is it from indolence or ignorance, or sheer thoughtlessness, that the people seem to study how to shut out the sunshine? Blinds and vines, curtains and draperies, are used to bar the entrance of the life-preserving sunshine. Death lurks in darkness. Even the potato vine cannot thrive in a sunless cellar.—*Journal of Health.*

HEAT OF THE BODY.—Warm weather is coming; we need less internal heat; and as this internal heat comes from the food we eat, we do not need as much food; hence, like a watchful mother, Nature takes away our appetite, so that we may not eat so much as before, to burn us with fever.—*Dr. Hall.*

How to Cure Stammering.

Lute A. Taylor, of the La Crosse (Wis.) *Leader*, who has been an inveterate stammerer, writes as follows about the way to cure the habit: "No stammering person ever found any difficulty in singing. The reason of this is that by observing the measure of the music—by keeping time—the organs of speech are kept in such position that enunciation is easy. Apply the same rule to reading or speech, and the same result will follow. Let the stammerer take a sentence, say this one—'Leander swam the Hellespont'—and pronounce it by syllables, keeping time with his finger, letting each syllable occupy the same time, thus: Le—an—der—swam—the—Hel—les—pont, and he will not stammer. Let him pronounce slowly at first, then faster, but still keeping time, keeping time with words instead of syllables, and he will be surprised to find that, by very little practice, he will read without stammering, and nearly as rapidly as persons ordinarily talk or read. Then practice this in reading and conversation until the habit is broken up. Perseverance and attention is all that is necessary to perform a perfect cure."

WARM BATH IN INSANITY, AND IN BURNS.—Dr. Wilkins, in his *Report to the California Legislature*, on Insanity, refers to the warm bath as a favorite treatment in Italy and in some parts of Holland and France. He often saw a dozen patients in one bath-room with their heads alone in sight, the bathing tub being covered except a hole for the head. There they usually remain from one to three hours, in some instances six to eight hours, and occasionally for days at a time. Dr. Gudden, of Zurich, kept a man thus immersed for five days, on account of a high state of excitement connected with bed-sores. The patient is represented to have slept well a portion of the time, and to have been cured of the sores. No exhaustion or ill consequences followed. A case is related of a man sealded by steam, and not insane, who was placed by Hebra in a tepid bath and kept there for three weeks, until a new cuticle had formed over the entire surface. This patient recovered without inconvenience. The water was kept at the temperature most agreeable to the patient. Thus employed it is said to relieve effectually the extreme pain from the burns.

DECAY OF THE TEETH.—The acids which cause the decay of the teeth are conveyed in the secretions of the gums and the mucous membrane of the lips and cheeks; and the usual points of attack are in the interstices and the groove in the facial walls of the teeth. The calcareous nature of the saliva is antagonistic to the acids and preserves the teeth from their dilapidating influence. Teeth are protected from this disease by the following conditions: Their irregular shape and order that the situations for the deposit of acid be as few as possible; the conservation of the teeth from noxious influences by constant brushing; the healthy structure of the tooth itself and of the mouth generally. Heider observed that the yellowish white teeth are less subject to the attacks of caries than those of a bluish shade, the enamel of the former being much harder; and the molars have been found to contain more mineral substance than the incisors.

SUNSHINE AND SLEEP.—Sleepless people—and there are many in America—should court the sun. The very worst soporific is laudanum, and the very best, sunshine. Therefore, it is very plain that poor sleepers should pass as many hours as possible in sunshine, and as few as possible in the shade. Many women are martyrs, and yet they do not know it. They shut the sunshine out of their houses and their hearts, they wear veils, they carry parasols, they do all possible to keep off the subtlest and yet most potent influence which is intended to give them strength and beauty and cheerfulness. Is it not time to change all this, and so get color and roses in your pale cheeks, strength in our weak backs, and courage in our timid souls? The women of America are pale and delicate; they may be blooming and strong, and the sunlight will be a potent aid in this transformation.

EMBALMING.—The art of petrifying the human body is said to have reached a high state of perfection at the hands of the Italian professors. They can render the body like stone, or by immersion in certain liquids it seems only to be asleep. Gozzini, of Genoa, has a curious museum of humanity petrified, well worth seeing. The ancients mummified, but that changed the appearance, while this process leaves the subject life-like in appearance. The body of Mazzini is to be so preserved.—*Ev.*

The art of embalming has probably been brought to as high a state of perfection in this city as ever at any time at any part of the world. The process here employed leaves the body in a perfectly natural state—the color upon the cheeks and lips, and even the delicate pink upon the finger nails is brought back, after death, almost, or quite as natural as in life.

EATING.—It is a great mistake to suppose that the more one eats the stronger he becomes. Gourmands are not giants. We gain in strength in proportion as the food eaten is digested, assimilated and converted into new and perfect material. Intemperance in eating is only more common than intemperance in drinking; but, according to the Latin proverb—"Pares crapular, quam gladius"—"Gluttony kills more than the sword."



PUBLISHED BY

DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....L. N. HOAG, (Sacramento.)OFFICE, No. 338 Montgomery street, S. E. corner of
California street, where friends and patrons are invited
to our SCIENTIFIC PRESS, Patent Agency, Engraving and
Printing establishment.

SUBSCRIPTION AND ADVERTISING RATES.

Subscriptions payable in advance.—For one year \$4;
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SAN FRANCISCO:

Saturday, May 25, 1872.

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CALIFORNIA CODES.—We are under obliga-
tions to Hon. Giles H. Gray, Assemblyman, of
120 California street, S. F., for a copy of
"Parts of the Codes"—California—that take
effect prior to Jan. 1st, 1873; printed by order
of the Legislature. It embraces the political
and penal codes.

The changes effected are important, and we
fear many of them will prove disastrous.

RADISHES.—The Acclimatization Society of
Paloalto recommends the following method for
rapidly growing radishes at any season: Soften
the seed by soaking in water for twenty-four
hours; put in small sacks and expose to the
sun; when the seed has sprouted (in twenty-four
hours) sow in a box filled with well-mannered
earth, and moisten from time to time with luke-
warm water. In five or six days the roots will
have attained the size of a small onion. In
winter the box is placed in the cellar, covered
over, and daily moistened with lukewarm water.

In Wurttemberg, in a triangular section of
land, with corners at Rottenburg, Göppingen
and Gundelheim, there are three million fruit
trees in 1,050 square miles (English). With a
population of 430 persons to the mile, there
comes 6½ trees per head, with an average yield
of nearly three hundred weight of fruit.

FIRST APRICOTS.—Ripe apricots, the first of
the season, made their appearance on Monday
last, and brought 50 cents a pound; two days
later, 40 cents; and in Thursday were selling at
25 cents a pound retail.

RIPE CURRANTS.—The first ripe currants, or
currants fully red if not ripe, put in their ap-
pearance in the markets last Tuesday, at 25
cents a pound.

The Grain Crop.

In the early part of the season the prospects
of a heavy crop of grain in most parts of the
State were unusually good. Estimates were
made by heavy grain dealers who were suppos-
ed to be well posted and whose judgment upon
such matters were considered the best, placing
the yield much greater than ever before. The
tendency of such estimates has been to produce
a general impression among all classes that
grain would be very plenty, and very cheap,
and that a very large quantity of bags would
be required to handle the same in. As the
season has advanced, proof has been accumu-
lating to prove beyond a doubt that we are not
going to realize so large a crop as was antici-
pated.

The winter was a peculiar one. The rainy
season set in quite late and though much more
land had been summer fallowed and sown dry
than in any previous year, still at the time the
rains commenced, not half the grain was sown
that the farmers intended to put in.

When once it commenced to rain it did not
cease until the ground generally was so thor-
oughly soaked that all cultivation had to cease
and very little more grain was sown till late in
February. So that our approaching harvest is
made up of very early and very late sown grain.
It is generally conceded that in consequence of
a want of the usual quantity of late rains and
of the prevalence of the north winds, the latter
must prove very light, indeed much of it will
be cut for hay, and a considerable will not be
cut at all. Now what are the facts in regard to
the early sown grain? We are satisfied that
the yield of this has been greatly over esti-
mated.

A trip through Yolo, Solano, San Joaquin
and Alameda counties lately, and inquiries of
reliable and good judges from Sonoma, Yuba
and Butte counties, have forced this unwelcome
conclusion upon us. We have seen very few
fields of the best grain that are not very
spotted. In fact our early sown grain in nearly
all portions of the State has suffered severely
from the uninterrupted wet weather during the
winter. The grain in the low places is gener-
ally drowned out, and grass and weeds have
taken its place. Careless and superficial ob-
servers have not noticed these facts, and if the
grain dealers have, they have not made the facts
public. It may not be to their interest to do
so. Having produced a general impression
that the crop would be very large, and grain
very cheap, it may be to their interest to keep
up this impression until they have turned it to
their gain, until they shall have disposed of the
sacks which they have possessed themselves of
at large prices, and secured the grain which the
farmers put into them at low prices. We feel
called upon to caution the producers against
being deceived by others or deceiving them-
selves in the premises. We call upon the local
papers in the grain districts of the State to in-
form themselves correctly upon the grain pros-
pects in their several localities, and publish a
statement of facts for the benefit of the farming
communities. We wish to see the producers
receive a fair equivalent for their products, and
the press in the farming districts can, if they
will, do much to secure this result.

Improved Mower.

We took a run over to Oakland a few days
ago to see a new patented device for working
the knives of mowers and reapers.

The inventor is Mr. M. Disney, and the im-
provement as claimed, consists in giving mo-
tion by excentrics instead of crank, to two
knives, instead of but one, as in most machines,
and working one knife close upon the other,
dispensing entirely with the guard-fingers.
The excentrics are entirely closed in a small
iron case or box, completely dust proof.

All wearing of the pitman causing lost mo-
tion and thumping, and consequent breakage,
is entirely avoided and the power to drive the
same is evidently much less than in other ma-
chines doing the same amount of work. The
improvement can be readily applied to any of
the old style machines, and the change made
at very little cost. We commend it to the at-
tention of every one interested in mowing and
reaping machines.

CONTINUAL BAKE-OVEN.—The Associated
Bakers of Vienna have offered a prize of 1,500
silver florins (about \$750) for a continual work-
ing bake-oven which shall best satisfy the de-
mands of the Vienna bakeries.

Jersey Cattle.

The Isle of Jersey is a small island in the
English Channel, only twelve miles long by
seven wide, which has long been famous for a
peculiar breed of cattle that take their name
from the island, to which they seem indigenous.
There is a bit of romance connected with the
origin and continuance of this breed, and
which is no less than this; that it is firmly be-
lieved by the people of the island, and by
many elsewhere, and supported by tradition—
that the breed is a hybrid; a cross of the little
native cow of the island and the deer. We had
no faith in any such pretensions; but we must
confess that our scepticism was a little shaken
on seeing them in their present purity of blood
on their native island.

Their Peculiarities.

The pure blooded Jersey has a head and
neck strikingly like that of the deer in form
and carriage; and whilst the body of the ani-
mal is all bovine, its tail is sometimes short and
bushy like the deer. But the feature that
would more particularly stamp them as the
offspring of a hybrid as mentioned, is that,
there are frequent instances with individual
animals of the breed in which they shed their
slender horns annually, as the deer does. But
be they hybrid or not, they are looked upon as
a breed so unique, that especial care is taken
to keep it pure from any further admixture or
change. By special enactment, not an animal
of the bovine species is permitted to be im-
ported, and there is none other than this breed
upon the island. There is no restriction how-
ever upon exportation and many animals are
annually sold to meet the constant demand.

Their Valuable Properties.

The Jerseys are small animals, the ox is of
but little account for labor; the cow only
giving value to the breed. There is a farm
23 miles out of Boston, Massachusetts, stocked
with Jersey cows, the butter from which is all
taken by Parker, of the Parker House, Bos-
ton, under contract, at 85 cents per pound,
and he pays this, when other good butter is
worth but 40 cents. Small lots sell readily at
from one dollar to \$1.25 per pound, to those
who are acquainted with its superior and pe-
culiar qualities.

The cows while giving milk cannot be kept
in hardly fair condition, so determined is their
tendency to "run to milk." There have been
several importations of this breed to the
United States and as many as twenty-one head
have reached California and distributed, some
in Oakland, some in Napa, and yet others in
Belmont.

An impression has gone abroad—and why
we cannot understand—that the California im-
portation are not the genuine Jersey breed;
but it is an error; for much of the stock has
the genuine Isle of Jersey brand upon it, and
the pedigree is known and endorsed by the
American Herd-book as genuine.

No better blooded stock of this breed exists
anywhere than that in possession of P. L.
Weaver, of Napa. His bull—Solace—and
heifers—Mela and Bessy—are not excelled in
pedigree anywhere. The cost of the bull was
\$800, the heifers \$600 each. The mere cost of
freight from Massachusetts here was \$72 in
gold.

It is gratifying to observe the interest taken
by men of intelligence and means, in the in-
troduction of all the finer breeds of animals
known to stock men, as there dissemination
cannot but prove of lasting benefit to the stock
and farming interests of the whole Pacific
Coast.

TEA-PLANT CULTURE.—It may not be gener-
ally known that tea plants can be grown from
cuttings. The mode of culture is to take the
partially matured growth of the present year
early in autumn, and set them in pots of sand
—sufficiently moist—and keep them in a warm
greenhouse, but with no additional heat.

In six or eight weeks they will form roots,
and the following spring are ready for trans-
planting to open ground. The tea plant blooms
profusely and the flowers are highly fragrant.
As a greenhouse plant it is being extensively
introduced into the Northern and Eastern
States, and held in high esteem as a half hardy,
pretty evergreen shrub.

WHEAT IN DRILLS.—Mr. Christian Bagge, of
Oakland, we understand, sowed wheat in drills
this year in order to cultivate out the mustard.
Ground that has been free from the growth of
the mustard for several years, has now by reason
of a wet season and deep plowing, brought
out a fresh crop of that troublesome plant.

Propagation of the Cherry.

The cherry is a fruit worthy of a more ex-
tensive production than it has yet attained in
any part of our State. The best cherries in
market now command readily from 75 cents to
\$1.00 per pound at retail. Either the middle
man who stands in between the producer and
consumer is making an enormous profit on his
sales, or the growing of cherries is attended
with splendid returns for the labor and care
bestowed upon their production.

True, there are localities where the cherry is
not successfully grown; but there are very
many, where they are; in these places the prop-
agation should be extended, for besides the
intrinsic value of the fruit as a marketable
commodity, the tree if properly grown is one
of the handsomest ornamental, fruit and shade
trees known to pomologists.

Cherries from Seeds.

There is sometimes a difficulty in pro-
curing suitable stock for the cherry.
Suckers, or sprouts from the roots of
old trees should never be used to propagate
from. If no other objection could be urged,
that of the well known tendency of like to pro-
duce like, would be enough; for any tree con-
stantly throwing up sprouts from its roots is
little better than a nuisance.

But the trees from such sprouts are never as
healthy or long lived as trees grown from seeds.

Many find it difficult to keep cherry seeds
from now until next spring, in a condition that
makes their germination certain, and nothing
but the greatest care to keep them in the proper
condition of moisture will effect it.

To those desirous of extending the culture of
this admirable fruit, we remark, that the surest
way of growing the cherry from the seed is to
obtain the seed now, when procurable, and
fully matured. Let the stones or pits dry for
two or three days after the cherry is eaten, then
crack, and taking out the seeds, plant at once
in good garden soil that can be kept in a proper
condition of moisture, and the seeds will vege-
tate in eight or ten days; and with proper care
will make a growth of fifteen or twenty inches
the present season; the most of them of ample
size for whip-grafting upon the following
spring.

The Crops in the Coast Valleys.

One of our correspondents has just returned
from a trip to some distance south of Salinas.
Many of the expansive barley fields are turning
golden in complexion. The entire barley crop
looks surpassingly promising—the crops stand-
ing fence high. The wheat in every instance,
regardless of the period when sown, looks most
promising. All the grain crops in the Santa
Clara, Gilroy, San Juan, Salinas and in the
narrower coast mountain valleys look as if as-
sured of producing heavy crops.

The vineyards look a little belated, but on
examination give promise of abundant yield.
Potato and other vegetable crops look exceed-
ingly well. Very many of the extensive farms
seem to be under a thorough cultivation, reflect-
ing much credit upon their owners. The ranch
men in the coast valleys seem to prefer confin-
ing operations to home stock and horse raising,
some having abandoned sheep raising to exclu-
sively engage in the industry of dairying, and
raising stable stock. The brush extensively
growing on many of the coast hills is evidently
a serious discouragement to sheep raisers.

Appreciative.

EDITORS RURAL PRESS.—I send you to-day by
Wells, Fargo & Co.'s Express, \$12.00, as sub-
scription for three years; I subscribed for your
very excellent paper when Mr. S. H. Her-
ring was around. Except for the great
amount of information I derive from your
paper, I could not afford to take it, for I am
farming on rented land, and have a small fam-
ily to support, and have but little means. I
have written to the Immigrant Union for infor-
mation in regard to public land in this State,
but have failed to get any answer.

R. D. GARD.

San José, May 18, 1872.

In the above we find an appreciation of the
RURAL, that certainly pleases us. A farmer,
"on rented land, with a family to support, and
with but little means," pays his subscription
for three years. May "the great amount of infor-
mation," he speaks of, never grow less, and
his own prosperity and success ever equal to
that of the RURAL.

PEERLESS POTATOES.—Mr. Nichols, of Fruit
Vale, corroborates our recent remarks regard-
ing the superior value of this kind of potatoes.

About Prunes and Almonds.

EDS. PRESS:—I do not propose to add anything to the agricultural fund this time; but wish to draw a few items from said fund, for use in an enterprise I am about to engage in, the coming year. I wish to plant largely of plums and prunes, with a view of drying the fruit for the market; and would like to know the best varieties for the purpose. Also, how much fruit may be expected from an acre.

I also wish to plant a few acres of almonds, and would like to know the best varieties for localities subject to late frosts in the spring, and whether the peach makes as good stock to bud or graft them on, as their own roots.

One of my neighbors has a piece of good land covered with 3 to 4 feet of coarse gravelly loam, deposited there by floods in years gone by, which makes it difficult to get trees started to grow on it; but when the roots once get through this covering of gravel, they grow very well; on this land he has both almond and peach side by side; the almonds have made a satisfactory growth, but the peaches have not done so well, and now—at four and five years old—they are showing signs of decay, and the fruit has always been worthless.

The almonds have been budded on peach "stocks," six to eight inches above ground, so that there was no possibility of their striking roots from above the union of bud and stock. Why is this? Does the almond exert an influence over the stock, and cause it to take more of the nature of the former and strike deeper into the soil? I would be pleased to hear from you, Mr. Editor, on all the topics above enumerated, as well as from your horticultural correspondents. REQUA.

Plums for Prunes.

The best variety of plums for conversion by drying into the common prunes of commerce, is that known by the name of German prune or large German prune, and by that name is well known to all nurserymen. It is a prune two inches or more in length, of an irregular oval, having usually one side more swollen than the other.

It has another peculiarity, it is less inclined to sport, mix or hybridize than any other variety, and can be raised in any quantity from the seed, though grown in the immediate neighborhood of other sorts, without showing hardly a perceptible difference from the original; hence this mode of propagation is usually resorted to where large numbers of trees are wanted; still there are usually plenty of trees of this variety, in most large nurseries.

The best French prune is made from the St. Catharine plum. If those two varieties can be obtained, there is no need of any other; they stand at the head of the list for drying purposes.

In regard to the quantity of fruit that can be grown on an acre, this must depend greatly upon the number of trees, and their age or size. We know, however, from information personally obtained in both France and Germany that the prune pays better per tree or per acre, than any other fruit tree cultivated.

The Best Almonds.

The best of all the almonds is that well known variety, the Soft Shell Sweet, sometimes designated Ladies' Almond. It has a shell so soft that it can be easily crushed by the fingers, and the kernel is sweet, without a trace of bitterness. Most of the almonds of California are a variety or cross between the hard and soft shell, the result of raising the trees from seed, as the soft shell will seldom produce the same from its seed. It is necessary, therefore, that resort be had to budding to procure the genuine soft shell.

The variety known as the Common Sweet, is a hard-shell variety, common to the middle and south of France, is the most hardy and productive of all known varieties, and is extensively cultivated. It resembles much the almond generally grown in California without its slightly bitter quality.

The Long Hard Shell is another excellent variety, about the same size as the Ladies' Almond, but with a larger and plumper kernel. There are several other good varieties, but the three named are the best.

Almonds on Peach Stalks.

The peach should never be used as stalks for the almond, when almond stalks can be procured. Even the peach makes a longer lived and healthier tree upon the almond than on its own stalk.

The stalk often exerts a peculiar influence upon the graft; thus we see some kinds of pears made better by being grafted on the quince; others are made poorer, and though the fruit in either case is neither enlarged or diminished in size, the whole tree is dwarfed in its habit of growth. On the other hand, the graft is sup-

posed to have but a very slight influence, if any, upon the stalk, except in its power of communicating disease. In budding the peach from a tree having the yellows, the disease is communicated to the stalk, and both perish together.

The almond being constitutionally a more hardy and vigorous tree than the peach, may possibly—in the instance referred to by our correspondent—impart an increase of vigor and healthy action to the peach stalk, through the descending sap, after having been elaborated by the leaves of the almond. In no other way can we account for the effect referred to.

We would be pleased to hear from nurserymen, orchardists or vegetable physiologists, upon the effect of the graft upon the stock and vice versa.

The Portulaca.

Our illustration is that of a brilliant, popular and hardy annual, with large, salver-shaped flowers; purple, crimson, yellow, white, striped, everything in the way of colors except black. Perfectly hardy, and delights in a warm situation and sandy soil. There are few low-growing plants that can be compared to this for brilliancy of color and abundance of blossoms.

It is excellent for a bed on the lawn, which should be full and rounding toward the center; sow the seed at once in open ground, being perfectly hardy.

The Ricinus.

The Ricinus, which makes a part of our il-



PORTULACA.



RICINUS.

lustrations, is simply another and the botanical name for that well known plant producing the castor oil bean; and though oftentimes grown by the acre for the production of oil, it is, nevertheless, a plant of very ornamental foliage and showy fruit; it is stately in growth and quite tropical in appearance, which makes it an attractive feature of the lawn, particularly when grown singly.

James Vick, the celebrated Rochester florist, whose kindness places us in possession of these illustrations, speaks of the Ricinus as an ornamental-leaved plant, which for out-door decoration for ordinary use is unequalled.

Take Care of the Trees.

A short excursion into the country at a recent date, satisfies us that a few of those who would like to be tree growers, are not giving that attention to their newly set orchard trees that they deserve and must have, to succeed as well as they might. There certainly are those who think, judging from their actions, that when a tree is set, their whole duty is done.

No wonder that putting out trees with them don't pay. They ought to expect that their trees will half of them die if only in self-defense. All fruit trees require watching and care; but it is a pleasant care, and a watching that does not fatigue.

See that the wind is not giving your trees an inclination from the perpendicular, keep the ground clear of all weeds and grass for a distance of three feet around every tree and see that the surface of the soil is kept finely pulverized; in the absence of a special mulching it is the next best thing that can be done to retain [the moisture of the soil below, so necessary to the success of all newly planted trees in this climate.

A Case of Conscience.

EDITORS RURAL PRESS:—I am in trouble; my little boy brought me the PRESS a while ago; I opened it and commenced reading out to my wife an article that I thought would be very entertaining to her; when all at once it occurred to me that the drift of that piece would soon get me into trouble. The fact is, it was bringing things home to a fellow, especially, when it mentioned the pigs making toilets, and the hens having their dust holes to wallow in, in the front yard.

Now here was a dilemma; I didn't like to stop reading for fear wife would suspect something was up, so I took the chances and kept on reading till I got through. However, as luck would have it, our little boy came in just then and raised a disturbance with some of the other little ones about his playthings and I also was taken with a sudden tickling in the throat, and could not read very loud, nor plain, which was considerable relief to me, and I was commencing to breathe easier, when lo! I discovered the first two letters of wife's name at the bottom.

I tell you what my heart went pit a pat, when I saw that. Owing to the confusion the little boy had raised, wife didn't seem to discover my embarrassment. After my equilibrium was restored, I ventured to tell her that the hens were wallowing in the front yard again; at the same time looking her straight in the face to see if I could detect her as the author of that piece; but I had to give it up; I could not tell. But breathed a little better when I saw the piece was dated at Russian River, but I am afraid that it is only a ruse to get me to fence the front yard without my suspecting the hint came from her.

Now, Mr. Editor, if that piece is signed by Mrs. Artemesia M——, she is my wife; and I want you to let me know right away; and you

bet I will have that fence built before November rolls around, for you see I could not bear to see Artemesia sitting on that old Virginny fence waiting for some fellow to come along to take her away from the dear old home. No, Mr. Editor, that would never do; it would demoralize the whole neighborhood; it would be especially hard just now, as harvest is coming on, and we would have no one to cook our grub, or help us to secure our grain.

The Crop Prospect.

Now, Mr. Editor, before I quit writing I must tell you something about our crops. The hay is rather light after all; we had a little too much rain last winter for Napa valley. The frost-bitten grapes are coming out finely; they will make a good half crop. I think we will have more grapes than wine cellars to use them, although we have eight in the immediate vicinity of our town. We want at least two more this season, I think. Grapes and small grain are not all we raise here. We grow corn, mellons of all kinds, squashes, beets, carrots, beans and in fact all kinds of garden "sass." We also raise good peaches, plums, pears, quinces and figs; but apples are not quite as good as in some other localities, though the trees bear well, but not so fine flavored as some; when it comes to fine grapes and wine, we don't give in to any of them.

If you will come up and make us a visit, Mr. Editor, I will take you over to Carver and Pellets, and we will test their wine. They are very obliging and don't charge anything for the testing. Yours to command, F. M.

P. S. Don't forget to let me know if Artemesia wrote that piece.

St. Helena, Napa Co., Cal., May 20, 1872.

Editors like doctors have a great many important secrets to keep, and were we to divulge the authorship of "Five years on a Farm," and then the names of all the other farmers' wives who feel just as she does about the matter complained of, you would see more wives "sitting on a rail," than was ever before recorded in the annals of agricultural experience, and to which the number of instances of "coming through the rye," would be as nothing. We are not going to tell.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.)

FOR THE WEEK ENDING MAY 7TH, 1872.

BALING-PRESS.—Frank A. Huntington and John F. Carter, San Francisco, Cal.; ante-dated April 24, 1872.

FENCE.—Rufus A. Riggs, Salem, Oregon.

FLAG-HOISTING APPARATUS.—John W. Mackenzie, San Francisco, Cal.

MACHINE FOR WASHING GRAIN.—George Cope-land, Denver, Col. Ter.

MACHINE FOR THE MANUFACTURE OF PNEUMATIC GAS.—Alexander Dalrymple Bell, San Francisco, Cal.; assignor to Joseph Wesley Stow, same place.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Oakland Farming, H. and I. Club.

The third meeting on Friday evening last, was well attended. Mr. James de Fremery was proposed for membership, and duly elected, with five others whose propositions were mentioned before.

Previous to discussing the question of irrigation, the President, Dr. E. S. Carr, made some scientific remarks, explaining the process by which water is drawn into, and assimilated in the life and growth of plants and vegetable structures. His short lecture, as it were, on the subject, and also the discussion by Mr. Dakin, of Ione, Amador Co., and several members of the Club, (including Messrs. Bagge, Little and Dwinelle,) were of much interest, and we may report them more fully hereafter.

A Pleasant Surprise.

A recess was voted for social interview, whereupon the President invited all present into an adjoining laboratory to see some specimens brought in especially for the examination of the Club. Most of the members were surprised to find a bountiful collation of fine strawberries, genuine cream and home-made cake, made out and spread before them by Mrs. Carr, and several lady members of the association. It was none the less enjoyed by being unexpected. As most of the club were strangers to each other, this gave a favorable opportunity for forming an acquaintanceship, which was well improved.

The refreshments were purely California productions, the beet sugar being contributed by Mr. Bradley, of Oakland, the strawberries by Mr. Bagge, and the cream by Mr. Thos. Prince, of Brooklyn. A vote of thanks was passed for the contributors and the ladies who prepared the festival.

A resolution for encouraging the manufacture of agricultural implements on this Coast, by our home mechanics, was read by the Secretary, and received by vote of the Club for discussion at some future meeting.

It was resolved to discuss the irrigation of trees at the next meeting, on Friday evening, May 17th, at which time the President has consented to give a brief lecture, with experiments illustrating some interesting features in the nature and transformation of water.

The model of M. Disney and Mr. Hildreth's Improved Mowing Machine was examined by the members present, who generally spoke favorably of its merits and advantages.

[Noticed more fully in another column.—EDITORS.]

Kansas City Exposition.

The Kansas City Industrial Association will hold their next annual Exposition and Agricultural Fair from the 23d to the 28th, inclusive, of September next, at the new and beautiful grounds of the Association, lying within and adjoining the limits of Kansas City. It is the intention of the managers to make it the most thorough exponent of agricultural and industrial interests ever held in the West.

The week selected for the fair is that following the Kansas State Fair, to be held at Topeka September 16-20, and preceding the St. Louis Fair, Oct. 1-10, thus giving exhibitors the opportunity of attending the great Western Fairs on one trip. California should be represented.

CREDIT OMITTED.—An article appeared in our issue of May 11, headed "Religious Value of Flowers," which was taken from an exchange, without giving the proper credit. It therefore appears as an editorial, and makes us as being in the possession of Fancy Pinks and Sweet Williams mixed; when in fact we have not got them at all, much less, mixed.



Muscular Exercise for Women.

[Written for the Press by Lisle Lester.]

If vigorous exercise is beneficial to the health of the physical man, why is it not for the physical woman, many of whom come into the world with delicate organizations, feeble muscular systems, and are invalids before they are twenty years of age, for the want of exercise to strengthen and build up the enervated body? Why are men advised to hunt, practice gymnastics, play ball, and live in the open air as much as possible, when physically reduced and needing a change in the mode of living, when women are kept indoors, dosed on stimulants and advised to "keep quiet," "avoid excitement" "and go out only in the morning for a short walk?" If active exercise and out-door amusements are good for one, why not for the other? The fact of the matter is, that we are not accustomed to see ladies indulge in what is known as "manly sports" and the exercises that are now exclusively practiced by men. In rare cases there is an exception; Vassar College, honor to its name, has taken a few progressive steps in this direction—if all our colleges would pay more attention to this subject, and combine some practical customs and habits with their studies of physiology and medicine, our woman of to-day, and our scholars for the future would be greatly benefited.

Ball Playing.

What reasonable argument can be raised against woman playing ball, both as an amusement and a healthy exercise? Make it a school exercise, for instance, under all the conditions necessary for propriety and order; what objection can be invented against it as a picnic pleasure, or an amusement for private home gatherings, where spacious grounds will admit of it. Only let it become fashionable, and we shall see less of pale lips, round shoulders, blue veins among the eyelids, and hear less of aches, that are never common in healthy constitutions.

Military Drill.

If this is essential, or beneficial in benefiting the physical condition of boys and men, giving it strength, suppleness and beauty of form, why is it not equally as beneficial for girls and women? We believe in the military drill as a part of the muscular exercise that should be adopted in all of our female schools; and that it should form a part of the routine of school life. We educate our children it is true—boys have access to military schools, but the girls of the country are supposed to cultivate the brain and polish the woman that will ornament society, in address and conversation and a few accomplishments; but the health, the purity of her system, the development of physical forces, all of which sympathize so closely with the mind, are almost forgotten and neglected; girls, many of them, graduate from school with wearied book-sick minds, physically weak and delicate, who are supposed to have "studied too hard," and with languid spirits, all indicating the lack of proper exercise, while crowding themselves forward in school studies and book lore. These are the women who are to become wives and mothers. Is it at all strange so many puny delicate children are born into the world—that so many short graves are found in our cemeteries? By all means encourage the drill in female schools; once adopted, it will soon grow into public favor, and people will wonder that so beneficial an exercise has been so long neglected. It is true calisthenics have been practiced for many years, but the method fails to meet the demand required by the muscular forces.

Rowing.

One of the best exercises for arms, chest, and back is rowing—it is popular with men as an amusement, but rarely tolerated by women. Ida Lewis was lionized for her ability in managing a boat—she was brought into public acquaintance by a deed of heroism, resulting from her proficiency as an oarswoman. She would have been considered an eccentric woman, departing from the sphere of the "refined delicate lady" had she come into publicity simply as a good oarswoman "capable of going to sea alone." But it was engrafted upon public tolerance through the medium of romantic heroism, rather a heroism seldom known only in romance. Ida Lewis proved, however, that women are capable of rowing boats if they desire to—and the fact of being women is no hindrance to acquiring the art; for this reason we admire Ida Lewis.

Archery.

This most delightful practice has been introduced by New Yorkers into the programme of amusements in Central Park—this is pleasant to chronicle; we are hopeful for the muscular health of New York ladies. All these progressive steps must come via amusements, and fashion-

ionable tolerance—we are proud of the results, and bless the means. The New York *Rural* speaking of this amusement says:

"Archery is yearly growing in favor in this country. If one visits Central Park, in New York, or the grounds of many of the fine residences which line the Hudson, parties of young folks will be discovered engaged in this healthy and delightful amusement. A striking characteristic of our English cousins is their love for open air exercise, and in the pursuit of this will be found the secret of their ruddy cheeks and robust constitutions, which in many instances contrast so favorably with those of American women. The turf, the water, and the lawn have about equal sporting attractions. Croquet has a certain charm, ladies, like men, love changes, and the practice of Archery is found to be a most agreeable one. During pleasant weather parties congregate among the trees in Central and Prospect Parks, for trials of skill, sight, patience and nerve. Lawn parties having the same object in view promise to be popular this season at the springs, the sea and mountain side. All amusements of this harmless nature should be encouraged."

In the middle ages the women practiced Archery, and Swiss maidens are said to excel in the practice. As an amusement it can be traced back in the history of almost every nation, and women were often noted for their perfection of the exercise.

In regard to all these suggestions that force themselves upon us, relative to the muscular benefit to be derived from a universal practice of Archery, Ball playing, Drilling, Rowing, etc., among women, we would add a word relative to the difference of treatment often advised for men and women in cases of dyspepsia. Men are recommended to rough out-door life—hunting, horseback exercise, and farm labor—but women who are needing the same treatment, so far as possible, are advised to spend the summer at some fashionable resort, where one must dress, eat, sleep, and think according to fashion—"go out in the morning for a short walk," wearing high-heeled shoes, and other outrageous inembrances—all this difference of advice because one happens to be a woman, is the result of a foolish pandering to custom. We do not countenance any practice that unsexes a woman, or robs her of her qualities of heart and nature, as a pure and refined woman, but we do not believe good health interferes with a woman being a lady, or that properly indulged muscular exercise giving her health, has any tendency to degenerate the woman. This prejudice, as it is called, against any departure from rules of society and customary usages is all a matter of education and fashion, and where health is concerned, absurd and foolish; it is not a prejudice of principle, a belief a fallacy for that which is looked upon as proper and honorable and creditable for a lady to do to-day, would have been outrageous and disgraceful twenty years ago. Suppose a woman had appeared in the street ten years ago dressed in a Dolly Varden, a huge chignon and dyed hair, would she have been tolerated? Yet the dress would have been as harmless as now—the difference is not in its propriety, but its fashionable toleration.

We would encourage every exercise that will add to, and build up the physical health of the American Women; and will look favorably upon muscular practices, rural sports, and out-door amusements of all kinds, that are properly conducted. And with this view we hope to see the American schools enlarge the drills, croquet, ball-playing, archery, rowing, and all such exercises as will promote the growth of healthy physiques, and strong able-bodied and able-minded women.

Chewing Gum.

A gentleman in the streets of C——, Iowa, lately counted, in fifteen minutes, seventy ladies chewing gum. This habit prevails extensively, especially in the West. Almost every school-girl you meet is chewing, chewing.

Of course it will not be pretended that this habit is either as injurious or as nasty as that of chewing tobacco, yet it is not altogether innocent. When food is taken saliva is secreted to aid in masticating it.

When other substances are chewed, saliva is, at first secreted as for food, but the vital instinct soon recognizing the nature of the substance, excretes a fluid similar to saliva for the defence of the tissues. This fluid (thrown out against tobacco, gums, etc.,) is really an excretion.

The bile occasioned by taking poisonous medicines has, by careful experiment and analysis, been found to be quite a different substance from that secreted by the liver in its healthy action. So the fluid which the salivary glands produce during protracted chewing of that which is not food, is quite different from healthy saliva. The waste, however, is probably just as great as if it were healthy saliva. Those who habitually chew gum unduly exercise the salivary glands, thus wasting vital force and injuring the glands, occasioning in them either ultimate debility, or undue development in size. There is also danger of permanent depreciation and poisoning of the salivary glands.

This constant chewing also injures the teeth. The teeth are no small item in a lady's beauty, and as they go to such rapid

decay in America, demanding so early the dentist's care, it is surprising that ambitious young ladies should so wantonly destroy them. Boys often ruin their teeth by cracking nuts; they do it to get at the kernel—they have a motive—but what possible motive can boys, girls, or women have for chewing, chewing, chewing, hour after hour, an insipid lump of gum?

The habit also diverts attention from study, and is one of the many familiar modern modes of killing time. In short, it is a useless, indecent unhealthful practice.

A Voice from the Country.

[Written for the Press.]

March is upon us with her blustering winds; spring has opened, and the surrounding hills and dales present a charming aspect, carpeted as they are in emerald green, intermingled with lovely wild flowers of every hue.

I was tempted out for a walk the other day in the clear, unclouded sunshine and genial warmth of a spring morning. I sauntered on admiring the gift which Nature has so lavishly bestowed upon us, nor ceased my walk till I had achieved the pinnacle of one of our highest natural observatories, a favorite point of mine. The hill was the highest of the surrounding foothills, and from it I have a splendid view of the far-spreading valleys and lowlands; on my left I could admire the blue ribbon of water, San Francisco Bay, looking narrow enough from my far-off standpoint; and occasionally I could detect the white sails of some schooners; then came a group of white houses, which I knew was Alviso, while scattered along were the farm houses, till my eye rested on the picturesque little town of Santa Clara; and farther yet the city of San José, all against the beautiful background of the coast range; first only a few low hills as they rise from the bay, but gradually rising higher as they make the circle that girds in the beautiful and fertile valley of Santa Clara.

A very paradise is our little valley. Almost everything the palate craves can be raised here, and many farmers' hearts are made glad by the promising prospects they have for crops up here on our hilly farms. The ploughing is nearly finished, while fields of waving wheat, barley and oats promise a bountiful harvest, though the lowland farms, (those near the bay,) have been too wet to plough till now, and many that have already their grain up are obliged to mow it and allow the second growth.

The few fine days we have been enjoying has assisted the growth of the pastures wonderfully; the cattle and horses are feeling gay and frolicsome, and are "picking up," while its influences on the milk cows is strong, as far as the milk is concerned, and butter commands nothing in the market.

We will answer "Mary Mountain" now, as to that "light literature." Ernest does not think it too light, if used in moderation, and in conjunction with enough of more solid reading. We are not conversant with Scribner's, but Harper's and the Overland are old friends and fireside companions, and occupy an honorable position on the center-table, with Frank Leslie and Peterson. The press is an essential part of every household (or ought to be), and in our cheerful home circle it is especially welcome, and its arrival most eagerly looked for. [A newspaper and magazine reader sometimes acquires a better education than the novel-reader or book-worm; particularly that practical, solid education necessary to battle life with.—Ed.]

ERNEST NORTH.

Queer Plantation.

Plant Cape Horn, and what would you have?—Music.

Plant a water rat, and what will you have?—Musk Plant.

Plant a small English coin?—Penny-royal.

Plant an unmarried man?—Bachelor Buttons.

Plant contentment, and what will you have?—Balm.

Plant a young lady and what will you have?—Bellflowers.

Plant Her Majesty and you will find a Crown Imperial.

Plant the morn, and you will have Nightshade.

THE DIFFERENCE.—A farmer gathers what he sows, while a seamstress sews what she gathers.

Young Folks' Column.

Teetotal Alphabet.

A stands for Ale, which we must not drink;
B stands for Brandy, an evil, we think;
C stands for Care, well known by the sot;
D stands for Drunkard; a slave, is he not?
E stands for Evil, which drink oft produces;
F for Fermented, and, therefore, bad juices;
G stands for Gin, the cause of much woe;
H stands for Hunger, that follows it, too;
I for Intemperance; then let us abstain;
J, Join Teetotal, and happiness gain;
K stands for Keep from the Ale-house away;
L stands for Liqueur, that leads men astray;
M stands for Malt, or Barley that's spoiled;
N for the Net in which the drunkard is coiled;
O for Oppression, the Drunkard's wife feels;
P for the Passion the drunkard's heart steeles;
Q stands for Quarrels, oft brought on by drink;
R stands for Rm, of which we won't think;
S stands for Spirit, which thousands has slain;
T for Teetotal, which we will maintain;
U for Unkindness, which the drink often follows;
V for the Vice, which oft leads to the gallows;
W for Wine, a mocker, we say;
X for a X we should bear every day;
Y stands for Youth, may they ever abstain;
Z stands for Zealous, teetotal to gain.

The Old Woman.

It was thus, a few days since, we heard a stripling of sixteen designate the mother who bore him. By coarse husbands we have heard wives so called occasionally, though in the latter case the phrase is more often used endearingly. At all times, as commonly spoken, it jars upon the ear and shocks the sense. An "old woman" should be an object of reverence, above and beyond most all other phases of humanity. Her very age should be her surest passport to courteous consideration. She has fought faithfully "the good fight," and come off conqueror. Upon her venerable face she bears the marks of the conflict in all its furrowed lines. The most grievous ills of life have been hers; trials untold and known only to God and herself, she has borne incessantly; and now, in her old age—her duty done! patiently awaiting her appointed time—she stands more honorable and deserving than he who has slain his thousands or stood triumphant upon the proudest fields of victory. Young man, speak kindly to your mother, and even courteously—tenderly of her. But a little time and you will see her no more for ever. Her eye is dim, her form is bent, and her shadow falls graveward. Others may love you when she has passed away—kind-hearted sisters, perhaps, or she whom of all the world you choose for a partner—she may love you warmly, passionately; children may love you fondly, but never again, never, while time is yours, shall the love of woman be to you as that of your old, trembling mother has been.

Tobacco—by a Small Boy.

Tobacco grows something like cabbage, but I never see none of it boiled, although I have eaten boiled cabbage and vinegar on it, and I have heard men say that cigars that was given them on election day for nothing was cabbage leaves. Tobacco stores are mostly kept by wooden Injuns, who stand at the door and try to fool little boys by offering them a bunch of cigars, which is glued into the Injun's hands, and is made of wood also. Hogs do not like tobacco; neither do I. I tried to smoke a cigar once, and it made me feel like epsom salts. Tobacco was invented by a man named Walter Raleigh. When the people first saw him smoking they thought he was a steamboat, and as they had never seen a steamboat, they were frightened. My sister Nancy is a girl. I don't know whether she likes tobacco or not. There is a young man named Leroy who comes to see her. He was standing on the steps one night with a cigar in his mouth, and he said he didn't know as she would like it, and she said, "Leroy, the perfume is agreeable." But when my big brother Tom lighted his pipe, Nancy said, "Get out of the house, you horrid creature, the smell of tobacco makes me sick."

A Boy's VERDICT once pointed the necessity of more preparation by teachers. He didn't like a certain teacher, and was put in another class, where he was satisfied. On being asked the reason for his preference, he said: "Why this teacher knows something!" So, teachers, we must "know something."

SOME one who is styled a "modern philosopher" has ascertained that "people go according to their brains. If these lie in the head, they study; if in the stomach, they eat; if in the region of their pockets, they steal."

DOMESTIC ECONOMY.

Mushroom Catsup.

Below we give Dr. Kitchiner's mode of making this article, taken from his "Cook's Oracle;" Take care that they are the right sort and freshly gathered. Full grown flaps are preferred. Put a layer of these at the bottom of a deep earthen pan, and sprinkle them with salt; then another layer of mushrooms and some more salt on them, and so on alternately, salt and mushrooms. Let them remain two or three hours; by which time the salt will have penetrated the mushrooms, and rendered them easy to break. Then pound them, into a mortar or mash them well with your hands and let them remain for a couple of days, no longer, stirring them up and mashing them well each day. Then pour them into a stone jar, and to each quart add an ounce and a half of whole black pepper and half an ounce of allspice; stop the jar very close and set in a stew-pan of boiling water, and keep it boiling for two hours at least. Take out the jar, pour the juice clear from the settlings through a hair sieve, without squeezing the mushrooms, into a clean stew-pan; let it boil very gently for half an hour. Those who are for superlative catsup will continue the boiling till the mushroom juice is reduced to one-half the quantity. It may then be called double catsup. There are several advantages attending this concentration; it will keep much better, and only one-half the quantity be required, so you can flavor sauce without thinning it; neither is this an extravagant way of making it, merely the aqueous part is evaporated; skim it well and pour it into a clean dry jar; cover it close and let it stand in a cool place until next day, pour it off as gently as possible (so as not to disturb the settlings at the bottoms of the jar) through a tamis or a thick flannel bag, till it is perfectly clear; add a tablespoonful of good brandy to each pint of catsup and let it stand as before; a fresh sediment will be deposited, from which the catsup is to be quietly poured off and bottled in pints or half pints (which have been washed with brandy or spirits). It is best to keep it in such quantities as are soon used. Take especial care that it is close corked and sealed or dipped in bottle cement.

Rules for Washing Dishes.

Scrape the dishes, put away any food which may remain on them, and which it may be proper to save for future use. Put grease into the grease pot, and whatever else may be on the plates, into the slop pail. Save tea leaves for sweeping. Set all the dishes, when scraped, in regular piles, the smallest at the top.

Put the nicest articles in the wash dish and wash them with hot suds, with the swab or nicest dishcloth. Wipe all metal articles as soon as they are washed. Put all the rest into the rinsing dish which should be filled with hot water. When they are taken out lay them to drain on the waiter. Then rinse the dishcloth and hang it up, wipe the articles washed and put them in their places.

Pour in more hot water, wash the greasy dishes with the dishcloth made for them; rinse them and set them to drain. Wipe them and set them away. Wash the knives and forks, being careful that the handles are never put in water; wipe them and then lay them in a knife dish to be scoured.

Take a fresh supply of clean suds, in which wash the milk pans, buckets, and tins. Then rinse and hang up this dishcloth, and take the other; with which, wash the roaster, gridiron, pots, and kettles. Then wash and rinse the dishcloth and hang it up. Empty the slop bucket and scald it. Dry metal teapots and tins before the fire. Then put the fireplace in order, and sweep and dust the kitchen.—*Catherine E. Beecher.*

GOOD TEMPER AND GOOD COOKING.—It is astonishing how much the cheerfulness of a wife contributes to the happiness of home. We remember hearing a husband say that he could gauge the temper of his wife by the quality of her cooking; good temper even influenced the seasoning of her soups and the lightness and delicacy of her pastry. When ill temper pervades, the pepper is dashed in as a cloud, perchance the top of the pepper box is included, as a kind of diminutive thunder bolt; the salt is all in lumps and the spices seem to betake themselves all to one spot in the puddings, as if dreading the frowning face above them. If there be a husband who could abuse the smiles of a really good tempered wife, we should like to look at him! Among the elements of domestic happiness, the amiability of the wife and mother is of the utmost importance—it is one of the best securities for the happiness of home.—*Ohio Farmer.*

FIRE KINDLINGS.—In France a very convenient and economical kindling is made by dipping corn-cobs for about one minute in a bath composed of 60 parts melted resin and 40 parts tar. They are next spread out to dry on metallic plates, heated to the temperature of boiling water. They are then assorted, according to size, and tied up in bundles. They sell for 1 to 2 centimes ($\frac{1}{2}$ cent) apiece. The "Compagnie des allumettes landaise" employs 30 workmen and makes about \$40,000 worth a year.

Helpful Hints for the Household.

RICE CAKES.—One pint of boiled rice, a tea-cup of flour, two eggs, a small spoonful of butter, a teaspoonful of salt, and milk sufficient to make a muffin batter. Bake on a griddle. Served hot. Eat with butter and powdered sugar.

A GOOD CUSTARD.—Upon five eggs, well beaten, pour one quart of milk scalding hot, stirring all the time; sweeten to taste; flavor with lemon or nutmeg; bake twenty minutes in an oven at a moderate heat. A custard made in this way is superior to one made of cold milk, as the taste is richer, and it does not "wey."

CRISP MUFFINS.—One pint of sifted Indian meal.

One pint of milk or cream.

Two eggs.

A teaspoonful of salt.

A spoonful of butter or lard.

Drop the batter in a hot, greased pan or oven by spoonfuls, taking care that your muffins do not touch. Let them bake till crisp and brown.

SOFT GINGER CAKE.—One egg, one cup of molasses, spoonful of ginger, one cup and a half of sour cream, one heaping teaspoonful of soda, and flour for rather a thin batter.

SUGAR COOKIES.—One cup of butter, one cup of sugar, three eggs, one teaspoonful of soda, half a nutmeg grated; roll thin and bake in a quick oven.

VELVET CREAM.—One half ounce isinglass dissolved in one and a half cups of white wine, to which is added the juice and rind of one lemon and three quarters of a pound of white sugar. Simmer till mixed; strain and set to cool. Add a pint and a half of rich cream, and stir till quite cold; then set in molds on the ice till stiff as blanc mange. Orange peel and juice are finer than lemon.

PLAIN CREAM.—One quart of sweet milk, one cup of cream, one coffee-cup of sugar, or less if you prefer, boiled with a piece of orange peel, or flavored with almond. Moisture four spoonfuls of sea moss farina with cold milk, and stir into a boil. Two spoonfuls of rose brandy is a delicious flavor for this cream. Stew any juicy fruit nicely, sweetening right, and when boiling stir in a spoonful of corn starch wet in cold water for every pint of juice. This gives a jelly-like appearance and clearness to the fruit without impairing the fruit in any way. While only a moderate quantity of sugar is used, the juice has almost a candied look. Cranberries, barberries, and such sour fruit are improved by it. If the juice is strained, the corn starch addition will make a very tolerable jelly, much pleasanter than the isinglass jellies. This must be poured in flat glass dishes to the depth of half an inch, and cooled. When firm, pour on the cream, let that stand, and add another layer of fruit. This will be found a delicious substitute for pies in summer when pastry is too rich to be eaten.

Wood Fires.

We often wonder why in an age abounding in inventions for household comfort, the oldest and best of all—a wood fire on the hearth—has almost disappeared. It cannot be on the ground of its greater expense, for that is not a trifle compared to luxuries which we see everywhere. Scrupulous housewives, we believe, object to it as untidy. But from such pharisaic regard of the outside of the cup and platter, may we be delivered! Now, in the first place, nothing keeps the air of a room so fresh and sweet as an open wood fire. Its advantage in point of healthfulness over ordinary ways of warming are immense. For a room of ordinary size, in this climate, it gives amply sufficient heat. And what a wonderful promoter of cheerfulness it is! It is as much better than the open coal fire than that is better than the black hole in the floor called a register. Its voice, as it purrs and crackles and roars, is enough to drive away the worst fit of the blues. Its mountain flames give the cheapest light in the world. The depths of its glowing coals continually allure and charm the eye. There are not many human beings who are as good company for every mood. After the day's work and fret it brings calm and cheer—whiles away all troubling thoughts. If the mind is at work, its unobtrusive companionship soothes and aids. When one is weary, he may find restful occupation in watching the freaks of the flames, and listening to their changeable voice. It brightens people and brings them together. To what scenes of friendship and social enjoyment does it lend a unique charm! It is the luxury of luxuries, a thing without which life is incomplete.—*Beecher.*

HOW TO KEEP CHEESE.—A good way to keep cheese from moulding or getting too dry is to place it between two wooden bowls and put them in the coolest, darkest corner of the cellar. We bought one last November weighing nearly forty pounds, and treated it after the above method; what there is left of it at the present time (April 19th) is moist and good; not an ounce has been wasted because of mould. Perhaps others may have a better way. If so please let us hear about it. I am perfectly satisfied with our way. The experiment was purely an original one and the test was satisfactory. The wooden bowls want to be large enough to encircle the cheese, and the edges must meet, not tightly, but so air can circulate slightly around the cheese.—*Ohio Farmer.*

Porcelain Wash-Tubs.

In a private letter from a lady residing in Brooklyn, N. Y., to a correspondent of the PRESS, a bit of useful information relative to the new porcelain wash-tubs, is extracted for our columns: "Several of the wealthy families of Brooklyn, one in particular residing at Montague Terrace, have introduced into their dwellings these new stationary tubs; they are models of convenience in washing, and save an immense amount of work; a large washing is done in a great deal less time than by the use of other tubs or inventions; they are very expensive but very convenient and a great improvement on other labor-saving washing apparatus."

In the *Mechanic and Inventor* we find a short allusion to this new invention. It corroborates the statement of the lady, and gives a little additional as follows: "An importer of crockery is dreaming of a fortune from the sales of 'stationary wash-tubs' made of porcelain, each having a corrugated inclined side for a rub-board. The porcelain tubs are about as large as the ordinary wooden stationary tubs. They are among the neatest of household appliances; yet the prices asked for them are beyond all bounds of reason."

Something New for the Kitchen.

One of the slowest and most tiresome operations of the kitchen is the beating of eggs; and when the work is supposed to be thoroughly done in the usual manner, the eggs are far from being in the best condition for use. Eggs,

when properly beaten, should be thoroughly aerated—a condition which cannot be secured by the ordinary spoon or knife process in ten times the space of time in which they can be perfectly aerated by the device herewith shown. A single egg, when properly beaten, ought to fill a good sized tumbler. In such condition two eggs will go as far, in making cake, etc., as three when beaten in the ordinary manner. Neither milk nor any other liquid can be thoroughly mixed with eggs until they are properly beaten—reduced to a perfectly aerated mass, of uniform consistency. For bread, cake or custard the air globules should be so finely divided as to be barely discernable by the naked eye. The work can be thoroughly done by this device in from one-fifth to one-tenth of the time ordinarily required.

Various devices have been presented to the public for beating eggs, but nothing, we think, equal to the one herein shown. This, in fact, is the only aerating device ever made, and is very properly called the "Aerating Egg Beater."

This beater, as will be seen by reference to the engraving, is simply a tin can with a cone bottom and a cone dasher, the lower portion of the dasher being perforated with very small holes, as shown. Under this arrangement the upper portion, when forced down, fills with air, which is forced through the egg, thereby finely dividing and thoroughly aerating the mass. This useful little kitchen device can be had of Wiester & Co., on New Montgomery street, in this city, who are also the authorized agents for selling territory for the patent on the Pacific Coast.

LITTLE CONVENIENCES.—Being at the house of a farmer in the extreme western portion of the State not long since, we opened the stable door, which the wind blew back upon us. Turning to find something wherewith to fasten it back, lo! there was a hasp and staple for that very purpose! Only one farmer in fifty is thus thoughtful about little matters; one in ten perhaps, would have had a loose rock or a prop for this purpose. But how much better is the hasp and staple, always in place and of little cost. Glancing about the stable and shed, we found everything else in just this neat, thorough, perfect order. Everything in its place, and there were lots of little handy fixings and conveniences to save steps or to save work.—And these are the things that, summed up, give dignity and importance and value to life. It is the part of wisdom to provide them.

HOW TO MAKE RUGS.—A little western girl, thirteen years of age, tells the *Kansas Farmer* how she made a cheap and pretty rug. She says:—I took a piece of fine fence wire and a file and made a crochet hook. I then got a coffee sack and cut it out square and hemmed it; then I took some cloth and tore it into strips like carpet rags. I then took my hook and a strip of cloth, and held the cloth on the under side and stuck the hook through the carpet sack, catching the cloth and drawing it in a little loop on the upper side. In my rug I have made a basket of flowers, and for a border I made a row of scollops.

PARSNIPS.—Boil with the skins on, then peel and cut in transverse slices and drop into a cream gravy, in which let them simmer on the stove a few minutes.

Another way is to boil and mash them, and moisten with milk or thin cream, or boil, peel and set a few moments in a hot oven to brown a little.

WARMED-OVER POTATOES.—Chop cold boiled potatoes; put them in a dripping-pan, or earthen or stone baking dish. Pour over them a gravy, made after the above receipt, and let them bake slowly in the oven an hour or so. A delicious dish.

The Farmer.

We find the following among our exchanges without credit. It is worthy of perusal:

The man who stands upon his own soil, who feels that by the laws of the land he is the rightful, exclusive owner of the land which he tills, is, by the constitution of nature, under a wholesome influence, not easily imbibed from any other source. He feels, other things being equal, more strongly than another, the character of a man, as the Lord of the animate world. Of this great and powerful sphere, which, fashioned by the hand of God and upheld by His power, is rolling through the heavens, a portion is his; is his from the centre to the sky. It is the space on which the generation before him moved on its round of duties; and he feels himself connected by a visible link with those who follow him, and to whom he is to transmit a home. Perhaps his farm has come down to him from his fathers. They have gone to their last home; but he can trace their footsteps over the scenes of his daily labor. The roof that shelters him was reared by those to whom he owes his being. Some interesting domestic tradition is connected with every enclosure. The favorite fruit tree was planted by his father's hand. He sported beside the brook, which still winds through the meadow. Through the fields lies the path to the village school of earlier days. He still hears from his window the solemn voice of the Sabbath bell which called his father and forefathers to the house of God, and near at hand is the spot where his parents laid down to rest, and where, when the time is come, he shall be laid by his children. These are the feelings of the owners of the soil. Words cannot paint them, gold cannot buy them; they flow out of the dearest fountain of the heart; they are the life-spring of a fresh, healthy and generous national character.

"Grass Butter."

The Massachusetts *Ploughman*, in its issue of May 4th, has this to say about California "grass butter. The Union Pacific has wrought still another wonder for us. A car load of fresh ranch butter was wheeled across from California to Boston last week, as fresh and fair as anything we have here in June. This butter is made on ranches where are kept herds of cows numbering anywhere from five hundred to four thousand. California, from the marked difference in the climates, can now send us January butter, so that we can spread our bread with the grass made article before our own hard winters peg out. That brings it in some four mouths earlier than we have it from our own farms. It seems hardly possible that we possess a country of such vast extent as to secure summer for some portion of it the year round. It is almost equal to the sunrise and the morning drumbeat as they make the famous circuit of the British Dominions. "Across the Continent" means a great deal more than any of us yet fairly realizes.

WOOL.—One noticeable feature in the wool trade this season is the number of small clips of nice clean wool. These clips rarely amount to more than two bales, indicating that they are the product of, say 150 sheep. The wool is of a far better quality than the average, larger and finer staple, in a more cleanly condition, and in all respects more marketable, and in consequence brings advanced prices. It shows that the farmers are beginning to see the advantage of keeping a few sheep along with their stock, and it shows further that a few sheep well kept are more profitable than many when illy cared for. This move on the part of our farmers is a step in the right direction, and if our large grain growers would follow the example they would find it to their advantage. A couple of hundred sheep well kept would bring an equal or greater profit than a large grain field, while enriching and improving the soil required for their maintenance.

THE LARGEST STOVE FOUNDRY.—The stove foundry of Jewett & Root, Buffalo, is said to be the largest in the world. The great stove warehouse is 100 by 150 feet, and has seven floors, all, except the ground floor and sample floor being piled with ever description of stove. (They have 250 distinct sets of patterns.) The foundry gives employment to 450 men, consumes from 40 to 55 tons of pig iron every day, and turns out about 60,000 stoves a year.

PERVERSION OF THE USE OF FISH.—Much complaint is being made, both in the United States and in Europe, that such immense quantities of fish which should be used for food are perverted from their legitimate use, and employed as manure.

KUM-AN-SEMEE is what a Troy tobaccoist calls the Indian in front of his store.

A NEW PAPER.—Murray, Dewey & Co., have published the first number of the *Pacific Coast Mercantile Director*, a copy of which containing 24 pages, lies before us. It is a fair exponent of the condition of all classes of trades and business enterprises connected with the advancement of the State's most important interests. To the merchant, professional or business man, it will be found a valuable auxiliary to the prosecution of their respective callings.

ON FILE.—English Advice Concerning Poultry. Improvement of the Soil. Inquiry about Budding Roses. Small Fruits, Continued. Diseases of the Horse. Something about Potato Culture.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., May 23.

FLOR.—We note a good local demand with a good inquiry for export. Sales reported embrace 10,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 5,000 Oregon extra. Considerable quantities of extra are being sent East by rail. We quote prices as follows:

Superfine, \$5.00@5.12½; extra, in sacks, of 196 lbs. \$6.50@6.62½; Oregon brands, \$5.75@6.50 in sacks of 196 lbs.

WHEAT.—The market has been active with good demand since our last review. Sales aggregate 15,000 sacks fair to choice at \$2.00@2.12½ per 100 lbs. Quotable at close at \$2.00@2.12½ per 100 lbs.

The latest Liverpool market quotation comes through at 12s. 6d. @ 12s. 9d. per cental.

BARLEY.—Market quiet. Sales embrace 2,000 sacks ordinary coast to choice bay, at \$1.40@1.55, which is the range at close.

OATS.—Market has been quiet during the week under review. Sales 3,000 sacks ordinary coast to choice bay, at \$1.60@1.75 per 100 lbs. which is the extreme at close.

CORN.—Is quotable at \$1.60 per 100 lbs.

CORNMEAL.—Is quotable at \$2.00@2.25 per 100 lbs. from the mill.

BUCKWHEAT.—Is in moderate supply at \$2.50 per 100 lbs.

RYE.—Is quiet at \$2.00@2.15 per 100 lbs.

STRAW.—Quotable at \$8.00@8.50 per ton by the cargo.

BRAN.—Is selling at \$17@17½ per ton from the mill.

MIDDINGS.—For feed, are \$22.50@25 per ton from mills.

OIL CAKE MEAL.—Is selling at \$30 per ton from the mill.

HAY.—Receipts have been light, with a fair demand. The market is firmer than at any time this season. Large supplies of new are shortly expected and old stock is nearly exhausted. Prices are nominally \$16.00@23.00 for fair to choice per ton.

HONEY.—New is selling at 20@25c in the comb, and 12@16c strained; old in comb 8@15; do strained 8@14c per lb.

POTATOES.—The market is quiet. Sales of new at \$1.62½@1.87½ per 100 lbs; old crop 50@75c.

HOPS.—The range is 50@75c.

HIDES.—During past week 1,640 Cal. dry sold at 18½@19½, and 2,190 salted at 8½@9½c.

WOOL.—The market is still very quiet and prices are nominal; contrary to general expectations. Receipts are large and stocks are accumulating, but sales are light. Stocks on hand amount to about 20,000 or 25,000 bales. Shippers and buyers have as yet affected no compromise with sellers, the difference in their views being between 2½ and 5 cents. Sales aggregate about 150,000 lbs at 40@45 for average lots.

TALLOW.—Market steady at 8½@9c. per lb. **SEEDS.**—Flax 3c.; Canary, 5@7c.; Alfalfa, 16@20c; Mustard, 3@6c. for the different kinds.

PROVISIONS.—California Bacon 13@14½c; Oregon, 13½@14. Eastern do. 11½@12½c for clear and 14@15 for sugar-cured Breakfast; Cal. Hams 14½@15; Eastern do. 14½@15½c; California Smoked Beef, 14c. per lb.

BEANS.—Market continues firm and the following are jobbing rates: Pea \$4.25; small White \$4; Small Butter \$3.50, large \$4.00; Bayo, \$4.25; Pink and Red are scarce.

ONIONS.—Price of new red has been reduced to \$1.50 per 100 lbs.

NUTS.—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c per lb.; Hickory, 12c; Brazil, 16c; Chili Walnuts, 15c; Italian Chestnuts 25c; Eastern Chestnuts, 15@20c; French Almonds, 25@30c; Princess Almonds, 35@40c; Los Angeles Walnuts, 20c; Cocoa-nuts, \$6.00@8.00 per 100.

FRESH MEAT.—Market remains as it was last week, with the exception of pork, which is lower. We quote slaughterer's rates as follows:—

BEEF.—American, 1st quality, 9@10 per lb. do. 2d quality 8@9 per lb.; do. 3d do. 5@7c.

VEAL.—Quotable at 6@10c.

MUTTON.—6½@7c. per lb.

LAMB.—Easier at 9@10c.

PORK.—Undressed grain-fed is quotable at 5½@6c. dressed, grain-fed, 8@9c. per lb.

POULTRY.—Live Turkeys, 23@27c. per lb.; dressed, 28 per lb.; large Hens \$9.50@10.00; Roosters, \$9.50@10.00 per dozen; Spring Chickens, \$5.00@8.00; Ducks, tame, \$9.00@10.00 per doz.; Geese, \$15@18 per dozen.

DAIRY PRODUCTS.—Fresh California Butter, common to good in rolls, is in fair supply and active demand; it may be quoted at 22½@27½c., with a few choice lots at 30; New firkin is quotable at 22½@26c; old is dull at 12½@20c.

CHEESE.—New California, 12½@14½c; Eastern is jobbing at 22½@25c. per lb.

Eggs.—California fresh, 32½@33c. per doz.; Eastern 27½@30. Oregon, 17@28.

LARD.—California 12½@13½; Oregon, none in market. Eastern in cases 14@14½c; do in tes. 11½@12c. per lb.

FRUIT.

Tah. Oranges, M. 20 30@25 00 Apples, eating, hx — @ 3 00
California do. 25 00@35 00 do cooking, hx — @ 1 50
Limes, M. 17 00 20 00 Pineapples — @ 1 50
Austin Lemons, M. — @ 1 50
Cal. do M 40 00 45 00 Gooseberries — @ 6 12½c
Bananas, bunch 2 50 @ 3 50 Cherries — 18 @ 50c
Currants — 15 @ 20 Apricots — 20 @ 30c

DRIED FRUIT.

Apples, per lb. 8½@9c Plums, do. 20 @ 22½
Raisins, per lb. 3 @ 15
Black Figs, per lb. 6 @ 8
White, do. 15 @ 20

VEGETABLES.

Cabbage, per doz. 50@75 Cucumbers per doz. 1 00@1 25
Garlic, per lb. 2 00@3 00 Summer squash, do. — 10
Rhubarb per lb. 2 00@3 00 Asparagus, per lb. 3 @ 5c
Green Peas, per lb. 12½@15 Tomatoes, — @ 7c
Sweet Peas, — @ 7c Spring Beans, — @ 7c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS.—Dealers report an active inquiry for seasonal articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING.—Burlap sacks 17½@18c.; Flour sacks 10½@10¾c. for qrs. and 16@16½c. for hls. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c.; Hessians 40 inch goods 14@14½c. per yard.

BOOTS AND SHOES.—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS.—The local trade has been good with a very active demand for export. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows:

Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$42.50@45; Cedar \$50@55. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices was adopted by the Lumber Dealers' Exchange on the 15th inst. the advance being \$2.50 per M.

Puget Sound Pine—
Rough, 8 M. \$22.50
Fencing and Stepping, 8 M. 25 00
Fencing, second quality, 8 M. 25 00
Laths, 8 M. 3 00
Fencing, 8 lineal foot. 2 00
Redwood—
Rough, 8 M. 22 50
Rough refuse, 8 M. 17 00
Rough Pickets, 8 M. 18 00
Rough Pickets, pointed, 8 M. 20 00
Fancy Pickets, 8 M. 30 00
Siding, 8 M. 25 00
Tongued and Grooved, surfaced, 8 M. 37 50
Do do refuse 8 M. 25 00
Half-inch surfaced, 8 M. 35 00
Rustic 8 M. 40 00
Batten 8 lineal foot. 2 00
Shingles 8 M. 3 00
Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$60 per M.

COFFEE.—Costa Rica 20½c; Guatemala 18c. Java 26c; Manila, 19½; Rio 19½@20; Ground Coffee in cases 30c; Chicory, 12½.

SPICES.—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 18c. Groundspices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH.—We quote Pacific Dry Cod in bundles at 4½c. @ 5½c. Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.00; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, \$10.50@11; in kits No. 1 \$2.50@2.75; do No. 2, \$2.00@2.25. Smoked Salmon, 7@7½c per lb.

NAILS.—Quotable at \$6 25@9.00 for assorted sizes.

PAPER.—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 per ream.

PAINTS.—Red and White Lead at 8@12½c; Whitening, 2½c.; Chalk 2c.; Paris White 3c.; Ochre and Venetian Red each 3½; Red lead and Litharge 10½@11c. per lb.

RICE.—Sales of China No. 1 at 7½@7¾c. and No. 2 at 7@7¼c. per lb; Siam, quotable at 6½@7c in mats; Carolina Table, 10@11; Hawaiian, 9½@10c per lb.

SUGAR.—We quote Cal. Cube at 12½c; Circle A Crushed, 12½c, and Granulated 12c; Golden C. 10½@11c; Hawaiian 8½@10½c. as extremes per lb.

SYRUP.—Prices may be given as follows: 57½c in bbls, 60 in hf bbls, and 65c in kegs.

SALT.—California Bay sells at \$6@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP.—The prices for local brands are 5@10c, and Castile, 13@13½c per lb.

TEA.—We quote Young Hyson at \$5c@1.15; Gunpowder, 95@1.50; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c@1.00; English Breakfast Congou, 50@85c; Basket 60@70c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, May 30, 1872.		MISCELLANEOUS.	
Butter, Cal fr. lb	35 @ 40	Flour sks, qr. 10	11 @ 11
do Oregon, lb	35 @ 40	do Hlf	16 @ 18
Honey, lb	25 @ 30	Potato G'y Bags	20 @ 21
Cheese, lb	20 @ 25	Second-hand do	12 @ 16
Eggs, per doz	40 @ 45	Deer Skins, lb	15 @ 22
Lard, lb	15 @ 20	Sheep skins, plain	12½ @ 25
Sugar, cr. 7 lb	10 @ 13	Goat skins, each	25 @ 50
Brown, do	12 @ 15	Dry Cal. Hides	18½ @ 19
Beet, do	12 @ 15	Salted do	17½ @ 18
Sugar, Map, lb	25 @ 30	Dry Mex. Hides	17½ @ 18
Plums, dried, lb	15 @ 20	Salted do	17½ @ 18
Peaches, dried, lb	20 @ 30	Codfish, dry, lb	10 @ 12½
Wool Sacks, new	82½ @ 85	Live Oak Wood	60 @ 100
Second-hand do	82½ @ 85	Tallow	8½ @ 10
Wheat-sks, 22x36	18 @ 19		

PRODUCE, ETC.	
Flour, ex. bbl	6 @ 65
Superfine, do	6 @ 60
Corn Meal, 100 lb	63 @ 50
Limes, per 100 lbs	40 @ 60
Wheat, per 100 lbs	60 @ 75
Oats, per 100 lbs	60 @ 75

FRUITS, VEGETABLES, ETC.	
Pine Apples, 1.50	6 @ 90
Bananas, bunch	50 @ 100
Cal. Walnuts, lb	20 @ 25
Cranberries, lb	10 @ 15
Strawberries, lb	10 @ 15
Cherries, lb	10 @ 15
Gooseberries, lb	12 @ 15
Mushrooms, lb	12 @ 25
Oranges, per 100	20 @ 30
Lemons, per 100	50 @ 60
Limes, per 100	20 @ 30
Figs, dried, lb	6 @ 8
Artichokes, doz	5 @ 10
Brussels sprouts	10 @ 12
Potatoes, New York	2 @ 3
Potatoes, sweet	2 @ 3
Broccoli, per doz	1 50 @ 2 00
Cauliflower, lb	50 @ 60
Cabbage, per doz	1 00 @ 1 50
Carrots, doz	15 @ 25
Celery, per doz	75 @ 100

POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, apiece	87½ @ 90
Turkeys, lb	30 @ 40
Ducks, wild, lb	30 @ 40
Tame, do	25 @ 30
Geese, wild, pair	25 @ 30
Tame, pair	25 @ 30
Hens, each	75 @ 100
Snipe, per doz	2 50 @ 3 00
English, do	2 50 @ 3 00
Pigeons, dom. doz	60 @ 75
Wild, do	2 00 @ 2 50
Hares, each	40 @ 50
Rabbits, tame	75 @ 100
Wild, do	75 @ 100
Beef, tend, lb	18 @ 22
Corned, lb	10 @ 12
Smoked, lb	15 @ 18
Pork, rib, etc, lb	15 @ 18
Chops, do	15 @ 18
Veal, lb	15 @ 18
Cutlet, do	20 @ 25
Mutton chops	12 @ 15
Leg, lb	15 @ 18
Lamb, lb	15 @ 18
Tongues, pig, ea	15 @ 18
Bacon, Cal, lb	18 @ 20
Oregon, do	16 @ 18
Hams, Cal, lb	16 @ 18
Hams, Oregon, lb	16 @ 18

FISH, MEATS, ETC.	
Choice D'field	— @ 25
Whittaker's	— @ 25
Johnson's Or.	— @ 25
Flounder, lb	15 @ 18
Salmon, lb	6 @ 8
Pickled, lb	5 @ 10
Rock Cod, lb	12 @ 15
Perch, water, lb	8 @ 10
Fresh water, lb	— @ 15
Smelt, large lb	8 @ 12
Small do	— @ 12
Silver Smelts	15 @ 20
Soles, lb	30 @ 35
Halibut, lb	10 @ 15
Salmon, per 100	— @ 100
Tomcod, lb	15 @ 20
Terrapin, lb	6 @ 10
Mackerel, p, ea	— @ —
Sea Bass, lb	— @ —
Halibut, lb	— @ 75
Sturgeon, lb	4 @ 5
Oysters, per 100	— @ 25
Crabs, per doz	— @ 50
Soft Shell	— @ 50
Shrimps	12 @ 15
Travlers	— @ —
Sardines	— @ —

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, May 30, 1872

IRON.	
Scotch Pig Iron, 3 ton	\$70 00 @ —
White Pig, 3 ton	32 00 @ —
Refined Bar, good assortment, lb	— @ 06
Boiler, No. 1 to 4	— @ 06
Plate, No. 5 to 9	— @ 06
Sheet, No. 10 to 13	— @ 06
Sheet, No. 14 to 27	— @ 06
Sheet, No. 28 to 37	— @ 06
Sheet, No. 38 to 47	— @ 06
Sheet, No. 48 to 57	— @ 06
Sheet, No. 58 to 67	— @ 06
Sheet, No. 68 to 77	— @ 06
Sheet, No. 78 to 87	— @ 06
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Sheet, No. 598 to 607	— @ 06
Sheet, No. 608 to 617	— @ 06
Sheet, No. 618 to 627	— @ 06



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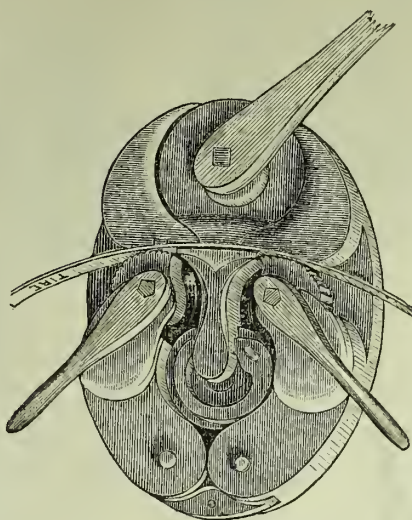
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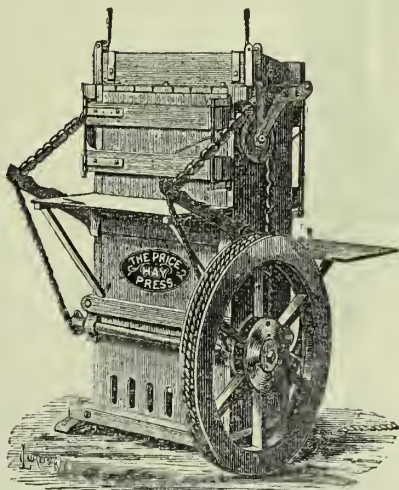
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STOCKTON, March 16, 1872.—This is to certify that we have used the Hughes Tire Upsetting Machine for three years, and can recommend it as a first-rate Machine for fitting heavy Tires.
 WM. P. MILLER.

We also refer to JOHN DUPUY, 523 Broadway st., S. F.; BERNHARD GALLAGHER, 222 Mission st., S. F.; KIMBALL & Co., cor. Fourth and Bryant sts., S. F.; LARKIN & Co., 631 Howard st., S. F.; T. D. LAMER, N. E. cor. Seventeenth and Valencia sts., S. F.; CUNNINGHAM & PARKER, 654, 656 and 658 Howard st., S. F.

With this Machine two men can upset the heaviest Tire in a few seconds after the Tire is heated. The strength of a child is enough to operate it. There are no nuts, bolts, or screws about it to break.

PRICE \$50 GOLD COIN, delivered in San Francisco, ready for use or transportation. If the Machine is found not to do its work well, we will refund the price.

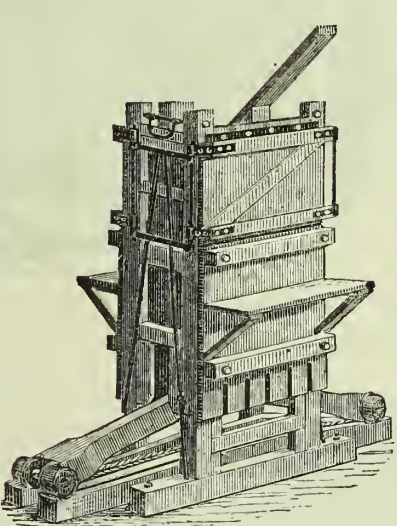
CUTTER & CO.,

Sole Proprietors and Agents for all the States and Territories west of the Rocky Mountains.

Office and Address—410 Kearny Street, San Francisco, Cal.

21v3-bpsa

THE EAGLE HAY PRESS.



The above is a correct representation of this remarkable

Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAI, OF ILLINOIS, TO WHOM LETTERS PATENT WERE
 ISSUED JANUARY 10TH, 1865,
 AND JULY 24TH, 1866.

Several years were devoted by the patentee to the perfection of this powerful press, and its unprecedented sale in the East induces the proprietors to introduce it into California and the Pacific States.

All who have seen or used these Presses pronounce them superior to anything used heretofore. The power is applied by means of two levers, and it will be seen the power increases in ratio to the resistance; as the levers approach a horizontal position the power can scarcely be estimated. It is not only a powerful Press, but has the advantage of being Cheap, and also Simple, therefore not liable to get out of order.

Three men with one horse can bale from Ten to Fifteen Tons per Day, each bale weighing 250 to 300 lbs. It obviates all necessity by heating the hay before pressing. On account of its great power, it is well adapted for pressing Hydes, Rags, Wool or Cotton. When a bale is pressed and fastened, the follower runs down of its own weight, and the bales can be taken out on either side.

These Presses are now manufactured in San Francisco by the

Kimball Car and Carriage MANUFACTURING COMPANY,

Who are the proprietors on the Pacific Coast, and will endeavor to have a supply constantly on hand.

Every Press made by them is WARRANTED to give satisfaction. Agents wanted.

PRICE, \$250.

18v3-3m

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PEOPLE'S PRACTICAL POULTRY BOOK.

A Work of 224 pages on the

Breeds, Breeding, Rearing and General
 Management of Poultry.

By WM. M. LEWIS, New York, 1871; with over One Hundred Engravings. Sold at this office for \$1.75, or sent postage paid for \$2.00.

Important to Stock-Growers.

I have EIGHT 2-year old full-blood (American Herd Book, registered) "Short-Horn" Durham Bulls, bred by one of the most famous breeders in Kentucky; also, 47 full-blood Cotswold Bucks and Ewes, with full pedigrees—all the above as good as can be found on either side the Atlantic—guaranteed. May be seen in the city. Will be sold at reasonable prices.
 Office at the Morton House, Post street, San Francisco.
 18v3tf PETER SAXE.

A Good Binder for \$1.50.

Subscribers for this journal can obtain our Patent Elastic Newspaper File Holder and Binder for \$1.50—containing gilt title of the paper on the cover. It preserves the papers completely and in such shape that they may be quickly fastened and retained in book form at the end of the volume, and the binder (which is very durable) used continuously for subsequent volumes. Post paid, 25 cts. extra. It can be used for Harper's Weekly and other papers of similar size. If not entirely pleased, purchasers may return them within 30 days. Just the thing for libraries and reading rooms, and all who wish to file the Press. 1ambhp

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Has any reader of the PACIFIC RURAL thought what a cheap book this paper will form when all the issues of a six months are united? Four hundred and sixteen pages for \$2. A convenient index will be inserted. We know that many subscribers would not, after reading the RURAL weekly, sell it for \$2 a volume or \$1 per annum.

State University.—The next term of the Preparatory Department will begin April 20th, 1872.

The course of study embraces the Ancient and the Modern Languages and the higher Mathematics, and is specially adapted to the University curriculum.

Terms, \$12 a term. GEORGE TAIT, Oakland.
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\$5 to \$20 PER DAY AND NO RISK.—Do you want a situation as salesman at or near home to introduce our new 7-strand White Wire Clothes Lines, to last forever. Don't miss this chance. Sample Free. Address Hudson River Wire Works, 75 William street, N. Y., or 1 Dearborn street, Chicago, Ill. 23v1-12mbp

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Every Description of Farming Machinery

FOR THE HARVEST OF '72. INCLUDING HODLEY'S Portable Engines, Russell's Threshers, Haines' Headers, Wood's Prize Mowers, Ball's and McCormick's Reapers, Kirby's Mowers and Reapers, Header-Wagons, Stud-haker Farm Wagons, Horse-Powers, Trucks, Hay-Presses, Horse-Rakes, Scythes, Snaths, Rakes, Cradles, Forks, Cultivators, Hay Cutters, etc., etc., all at less than invoice cost, at the old Farmers' Agricultural Warehouse and Machine Depot of

TREADWELL & CO.,

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v3-cow16p

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On hand and made to order at Lowest Prices by the

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New FILES on hand. Old FILES Re-Cut.
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Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in sections and quarter sections, at reasonable prices and on accommodating terms—say, one-fourth cash and balance in one, two and three years, with interest at 10 per cent., payable annually. Apply at the office of the Company, No. 542, corner Market and Montgomery streets, over the Hibernia Bank, San Francisco, or to the agent, W. R. OLDEN, Anacim. 12v3-3m

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FRUIT, PRODUCE,

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Between Front and Battery.....SAN FRANCISCO.

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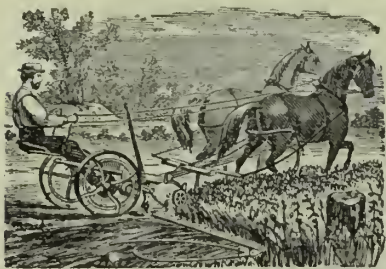
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San Francisco Wire Works,

NO. 665 MISSION STREET,

Near Third Street.....San Francisco.

C. H. GRUENHAGEN & CO.



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful test. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are,

1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.

2d—It can be run with a STIFF or LIMBER POLE, as desired.

3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

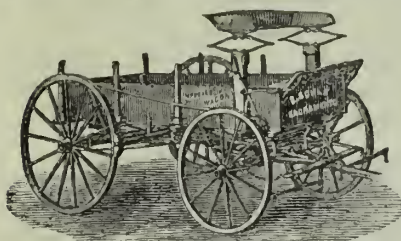
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Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

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FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,
SACRAMENTO, CAL.

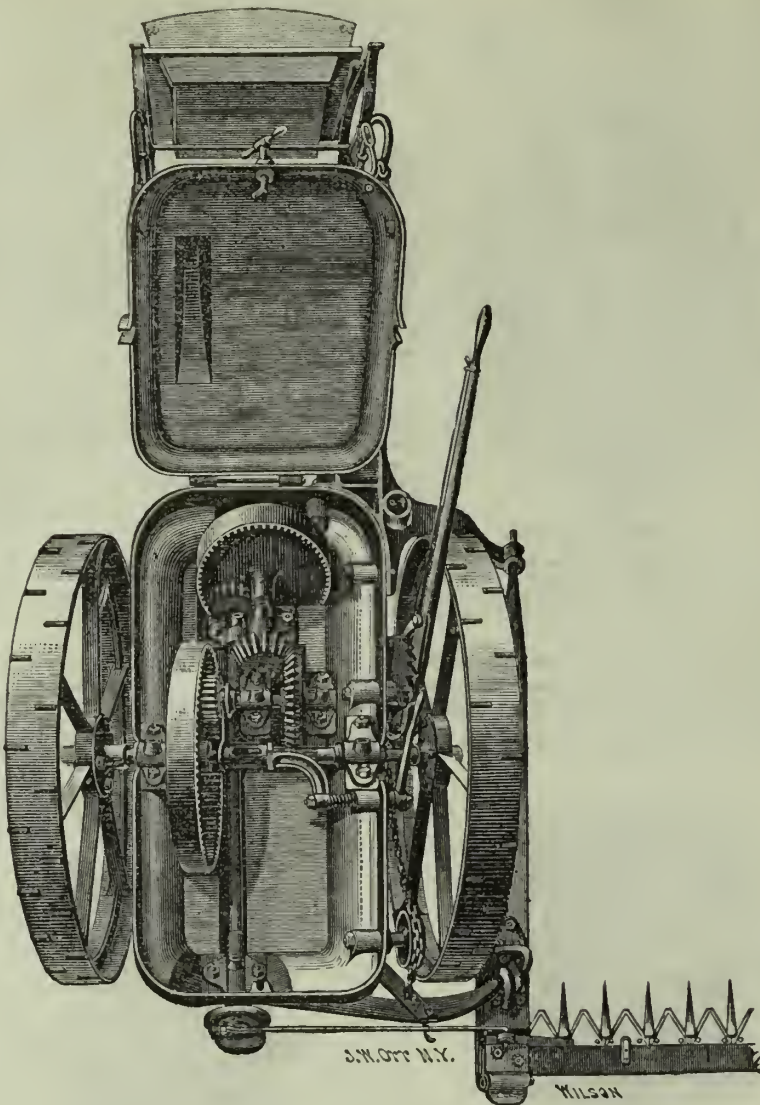


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Young and Middle-aged Men and Boys may enter on any week day, and in addition to all the advantages to be enjoyed at any other Business College, have access to the General Lectures and Literary Exercises of the University. Our Diploma is received as conclusive evidence of proficiency by the Bankers, Merchants and business men.

GANG PLOW.

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains.

ITS GEARING IS SHAPED TO STANDARD GAUGE, AND EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAFT and the same DURABILITY which pertains to cut gear in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

"There is no other Harvester."

For Prices and Complete Information address

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Importers and Jobbers of Foreign and Domestic Hardware.

SOLE AGENTS FOR THIS COAST FOR

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Electric Cross-cut Saws,

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Importers and Dealers in

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FOR THE HARVEST OF 1872.

Buckeye Mowers,

Buckeye Mowers and Reapers,

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Also, a full stock of PLOWS, HARNESS, CULTIVATORS, and all kinds of HARVESTING IMPLEMENTS.
Send for Circular giving full description.

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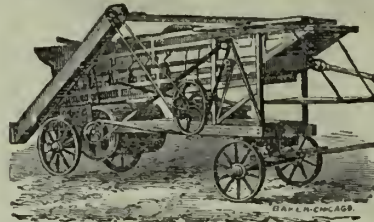
Grain-Saving, Time-Saving, Money-Making

"VIBRATOR" THRESHERS,

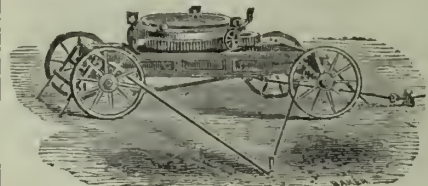
AND THEIR ELEGANT CONVERTIBLE

"Mounted" Horse Powers.

Office and Factory at Battle Creek, Michigan.



Recognized, in the trade and in the field, as the "leading thresher" of the period. FULLY ESTABLISHED through many years of successful use. ENDORSED by more than sixty thousand farmers and grain raisers who have employed and used them. IN USE in eighteen States and four Territories, with largely increasing demand and growing popularity. UNIVERSALLY COMMENDED as embodying the only true principle, and pronounced the "coming machine." PREEMINENT for saving grain, saving time, fast work, perfection of cleaning, adaptation to varying conditions of grain, convenience, ease of draft, and ease of management. PECULIARLY ADAPTED to handle Flax, Timothy, Alfalfa and other seeds, so difficult with others. IN DEMAND by grain raisers, at remunerative prices, while neighboring machines are idle. ATTRACTIVE in simplicity of parts, having only four belts and one set of gears. SPECIALLY NOTICEABLE for making no "litter," and requiring no "cleaning up" process after it. ASCERTAINED BY FARMERS to save them the cost of their threshing bills, by the increased saving of grain alone, over and above the best of others. OBTAINING the "pick" of jobs and extra prices for its work. UNEQUALLED in durability, handiness, ease of management, ease of draft, elegant finish, substantial construction.



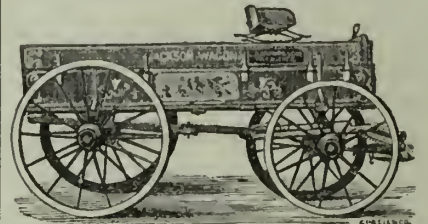
THE ELEGANT "MOUNTED" POWER—mounted on four wheels, where it remains when in operation. ATTRACTIVE FEATURES: securely fastened with two stakes; levers, tumbling rods, etc., carried with it; the "angling" line shaft, by which all short kinks are avoided in "coupling up;" all boxes, journals, shafts and gears independent of the wood frame; gears "clutch" on; only one key used; convertible to different speeds, at trifling cost, to match other machines; of the lightest draft, very durable, easily and cheaply repaired; sold separately, if desired, and speeded to match other separators or machinery.

ALL PERSONS who think of buying a new Thresher and want the "leading machine," and all farmers who raise grain and want it threshed, saved and cleaned to the best advantage, are cordially invited to send me their address, and receive (FREE) our Illustrated Pamphlet and Circular, containing a full description of these superior machines, with other valuable information.

JOHN NICHOLS,
285 K Street, SACRAMENTO.

20v4-2m

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JACKSON MICHIGAN WAGONS are known to be the best FARM and TEAM Wagons sold on the PACIFIC COAST. Send for Certificates. The

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others.

Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only; or fitted up with California Backs and Brakes, Spring Seat, etc., or with Eastern double side-box bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices.

N. B.—WARRANTED FOR THREE YEARS.

J. D. ARTHUR & SON.,

Corner California and Davis streets,
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17v3eow3m

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"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins, Sweeney, Stiff Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

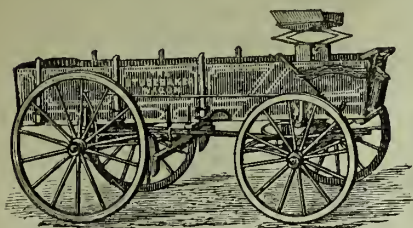
It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors,

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Stockton, Cal.

STUDEBAKER WAGONS



Have become
The Standard Wagons of the Pacific Coast.
For QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.
IRON AXLE,
THIMBLE SKIN,
HEADER AND

SPRING WAGONS,
Of all sizes, with HEAVY TIRES riveted on, always on
hand and sold for \$100 to \$165.

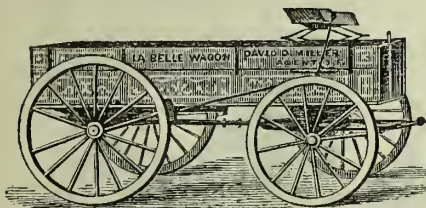
Having established a MANUFACTORY to build WAGONS,
BENS, BRAKES and SEATS, I am better prepared than
ever to furnish

Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested.
Send for CIRCULAR and PRICE LIST.

16v3-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.

Thimble-Skein Farm Wagons.



JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
Sheboygan Falls, Wis., established in 1850. Also the
Celebrated La Belle Wagon,
Manufactured by FARNSWORTH, WOODWARD & CO.,
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PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.
3 in Thimble Skein. \$120 3 in Running Gear. \$90
3 1/2 " " " 125 3 1/2 " " " 95
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Above prices include Box
and Top-Box, Spring-Seat,
Brake, Double and Single-
Trees, Stay Chains, Neck-
Yoke and Wrench. Racks
with California Brakes, in
lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring
Seats, or without. All Wagons are manufactured to my
order for this coast, and are warranted for two years in
any climate, and will be delivered on board of any boat
or railroad cars free of expense to the purchaser.

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IMPORTER AND MANUFACTURER,
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IMPROVED NOISELESS

Family Sewing Machine
IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out
of order, sews the heaviest or lightest goods, and
is remarkable for the great variety, perfec-
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It is the only Machine

Making the triple-threaded seam, with the twisted loop
stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recom-
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Its Work Received the First Premium

At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.
Call on or address

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22v2-9m

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

As a Family or Light Manufacturing Machine it has
no superior—uses a straight needle and shuttle, and
makes the Lock Stitch (alike on both sides). Send for
a circular. Agents wanted in every town.

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Established in 1852.

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The Proprietor having upwards of
100 ACRES OF NURSERY GROUNDS,
well stocked with all the leading and best varieties of
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Choice Roses and Pot Plants
of every variety. Trees and Plants securely packed to
travel any distance.

FOREST TREES

of Australia, Europe, China and Japan; in fact, we aim
to have and to get all and everything desirable.

Parties planting can find in this establishment what-
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place without being obliged to go from one Nursery to
another.
W. F. KELSEY, Proprietor.
12v3-3m

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15 Years Established.

W. R. STRONG,

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Garden,
Flower,
Field,
Fruit,
Tree and Shrub,

Grass and Clover Seeds,
Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United
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My annual catalogue is ready and will be forwarded
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ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wil-
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Kentucky Blue Grass, Red Top Timothy, Red and
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Seed Potatoes.

Early Rose, Bruze Prolife, Climax, Excelsior and
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DEALER IN
All Kinds of Grain and Produce.

Has on hand large stocks of Wheat, Bar-
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SEED GRAINS, of all kinds, a specialty.
WHEAT—Choice Seed—Bay Coast, Aus-
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BALD BARLEY—Superior Seed for Hog Feed or Hay.
OATS—Norway and other kinds, selected and clean.
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In daily receipt of consignments of Hay, Straw
Poultry, Eggs, Wool, Hides and Tallow.

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THE OLD Maple Leaf Nursery.

Has constant-
varieties of
ORNAMENT-
GREEN and
SHRUBS; also
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merous to n-
Green House
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and Flower Seeds of all kinds, are for sale by
ly on hand all
FRUIT AND
AL EVER-
DECIDUOUS
ROSES too nu-
merous to men-
Plants, Flow-
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Floral Guide for 1872.

Containing seventy-two pages and Two Beautiful
Colored Plates nicely illustrated, giving plain directions
for the cultivation of nearly a THOUSAND VARIETIES of
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IMPROVED STEAM WATER LIFTER,
With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in al-
respects the most ECONOMICAL of all
Steam Pumps. Uses the same steam
twice instead of once. Any person can
run it. They are used on the Central
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Patronize Home Industry—Buy California-
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For sale by Crockery Dealers generally throughout the
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JOHN TAYLOR & Co.,
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BOX CHURNS,

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Thermometer Churns,

THE "BLANCHARD CHURN,"

Dasher Churns,

Douthett's Patent Dash Churns,

HARDWOOD CHURNS,

Butter Workers, Etc.

MANUFACTURED AND FOR SALE BY

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Nos. 118, 120 and 122 Front Street, SAN FRANCISCO.

We are the ONLY manufacturers of this line of goods
on this coast; and having put our prices at much lower
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A Good Home-Made Churn.

Send for a catalogue, and see for yourself. All orders
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JAMES G. STEELE & CO.,

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Import and sell directly from Eastern and Euro-
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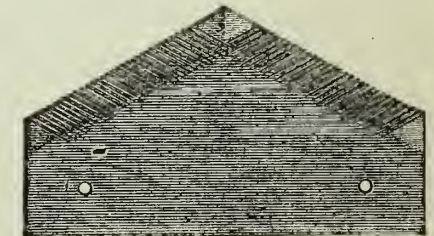
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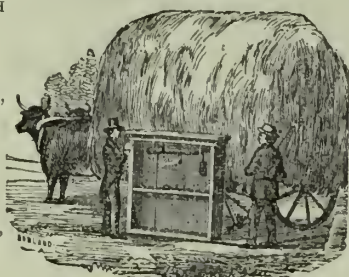
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PURCHASERS please say advertised in Pacific Rural Press.



Volume III.]

SAN FRANCISCO, SATURDAY, JUNE 1, 1872.

[Number 22.]

The Melon and Its Varieties.

The principal species is *Cucumis melo* the musk-melon. The varieties in cultivation are very numerous, some of them distinguished by a thick and warty rind, some by a rind cracked in a net-like manner, some by ribs and furrows, some by a perfectly smooth and thin rind; they differ also in the color of the flesh of their fruit, which is red, green or yellow; and in the size of the fruit which varies from three or four inches to a foot or more in diameter.

The melon is either eaten by itself or with sugar, sometimes with pepper, salt or ginger. It is grown in the open air in all warm countries, and delights in a dry atmosphere and brilliant sunshine. A warm, sandy, loamy soil is best suited to its growth. In most countries of Europe, where cultivated, great care is taken in selling the fruit by dusting the female flower with the pollen of the male flower, which secures a certain crop; but where honey bees are numerous this trouble is dispensed with, whilst in California, bees or no bees, the crop is almost invariably abundant and certain.

The water-melon or *cucumis citrullus* is highly esteemed and much cultivated in all warm countries. It is a native of Egypt and Persia. It has deeply lobed and gashed leaves, large long and sometimes round fruit, with smooth, generally dark green or spotted rind, pink, white or yellow flesh, less sweet than the musk-melon but more juicy and watery, and therefore much prized in all warm countries, not merely as an article of food, but for quenching thirst and allaying fever. Both musk-melons and water-melons are used extensively in Hungary and along the shores of the Mediterranean for sugar making.

The peculiarities of form that pertain to several of the most highly esteemed varieties, are shown in our illustration with marked fidelity; for though all the musk-melon family will readily sport in their admixture of pollen, producing an infinity of hybrid sorts, yet there are certain forms and characteristics that pertain to particular varieties of the family, when kept clear of admixture, that mark well their distinctive type.

In our illustration, for the use of which we are indebted to James Vick, the florist and seedsman of Rochester, N. Y., we give in No. 1, the type of a highly prized musk-melon, known as the Nutmeg; it is of medium size, quite round in its transverse section, but slightly elongated which gives it the form of the nutmeg, hence its name. Its flesh is green in color and always excellent.

No. 2, is the Fine Netted, a delicious and very early melon, of oblong form and a favorite with gardeners on account of its early maturity and productiveness. No. 3, is the Pine-apple, a dark green, oval melon, finely netted, and with a very thick, sweet and juicy flesh; they vary greatly in size, but are uniformly reliable in quantity and a profitable melon to the grower.

No. 4, is the White Japanese, a small but deliciously and delicately sweet melon; flesh very thick, of a pale green color, whilst the skin is of a creamy white and exceedingly thin; it is one of the finest of the melon family. No. 5, is the Prolific Nutmeg, a very good, hardy and prolific variety; fruit from medium size to large; nearly round and netted; flesh thick, green and of good flavor; a very profitable melon. No. 6 is the Green Citron. This

melon attains to large size, with thick, green flesh of good flavor.

There are a few other quite distinct varieties, some excellent and noted for their early and very late maturity. Among the former are the Early Christina, with a yellow flesh, and Jenny Lind—the latter a small fruit, but very fine in quality. Among the late maturing muskmelons the Persian stands first; a very large, oblong, green fleshed melon, very productive and excellent in a hot climate and dry atmosphere.

Figure No. 7, is the water-melon known as Mountain Sweet; this variety is widely disseminated and is one of the best varieties known. Size large, in form oblong, skin dark green, flesh red, sweet and rich; in favorable localities

The Wool Market.

We notice that the papers of the State are swinging round to our position taken weeks ago, that there was really nothing or but little to warrant the high prices to which a few home speculators had run up the prices of California wools. The following from the *Bulletin* of May 28th is in point:—Most of the wool received this season is yet on the market. Several causes have contributed to this result, the principal one, of course, being the nominal demand. The satisfactory prices realized for the last fall's clip, and the upward tendency of the market, both here and at New York and Boston, early developed a speculative feeling, which led many new buyers into the field, and caused a

gether with the concession in prices brought about during the interval, there is likely to be some activity in the movement of California wools. It is noteworthy that the receipts are 6,000 bales less than for the same time last year. This is rather against the extravagant estimates of yield indulged in a few months ago, and confirms the recent statements that the clip, being shorter and cleaner than usual, will present no material increase on last year's clip, which was about 20,000,000 lbs., including the spring and fall clips and pulled wool. This fact may add strength to the market, but will not result in any material advance in the current rates, which are unusually high, and are unwarranted by the present condition of the wool market.

Cutting Back Grapevines.

A few persons are found in all grape growing districts and particularly among hot-house grape growers, who practice the cutting-in system—as it is called—with a view of enlarging the size and hastening the maturity of the fruit. The process consists in shortening the wood of the current year—or that producing the fruit—to within a few joints of the outer cluster, and doing it about the time the grapes have attained to two-thirds or nearly their full size.

The reason for doing it is based upon the supposition, that the sap that would pass into and nourish the growing shoot beyond the cluster, is all retained and kept back, the better to feed and nourish the grapes. This is simply a mistake, an error of judgement, in not understanding the true theory of the movement of sap in vegetable growth.

If any advantage is gained in cutting off all beyond four or five joints, why not cut them off directly at the last bunch and thus let all the sap stop there and go directly into the cluster? and yet we know from trial this will not do; for the grapes will increase no more in size, and if they mature at all, they will be sickly specimens of fruit.

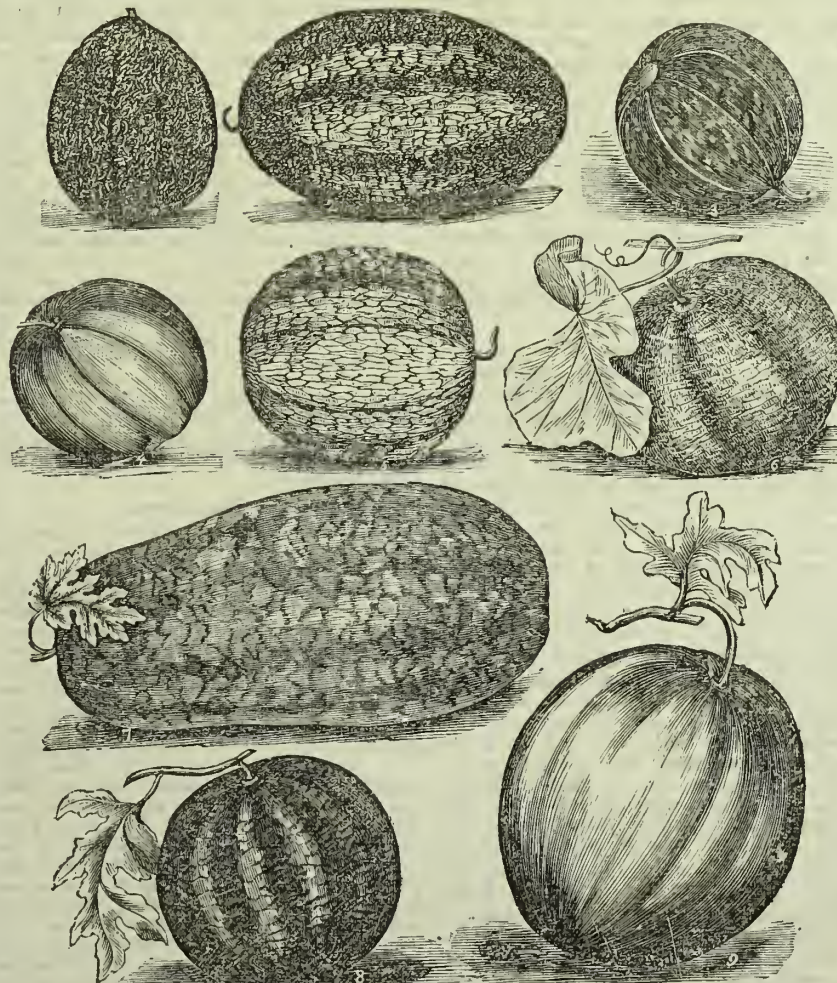
Elaboration of Juices.

The juices or sap as it ascends or passes through the pores of the wood, is more and more elaborated and fitted to become the true and necessary food of the ripening clusters, which have the power and do elect from the sap so conveyed, that part only, which is fitted for its uses.

Now instead of trying to force all the ascending sap into the clusters, which, while it would to some extent nourish them, would also poison them, for all of the sap is not the proper food for the fruit.—the effort should be to cause all the juice possible to pass the point of union of the cluster with the vine, thus bringing the largest possible amount of fruit food within reach of the cluster.

How to affect this.

It can be done in no other way than by permitting the growing shoots beyond the cluster to make all the growth they can, and instead of weakening the clusters it will add greatly to their size and perfection in every respect. Every healthy leaf should be left on—for the leaves are the lungs of the plant—and clipping of all or any part of those immediately around or near the fruit is injurious always. Strip one of those leading shoots of its leaves to the terminal buds and it will perish; and in proportion as a lesser quantity is removed, in the same degree is the injury produced.



THE MELON AND ITS VARIETIES.

it is an early melon and particularly hardy, a favorite everywhere.

No. 8, which takes rank among the water-melons is the Citron, a round, medium sized melon, skin green striped with white or mottled; has a thick hard rind or flesh and is used only for making preserves. No. 9 is the Black Spanish, an old variety that has retained remarkably its distinctive qualities of size, form and color; it is a medium sized, round dark green; red flesh, sweet and rich.

Among new varieties, Goodwin's Imperial stands at the head of the list of water-melons—so say the amateurs.

A LARGE FLOWER COMING.—One of the large century plants in the grounds of Mr. J. W. Knox, on Telegraph Road, Oakland, has commenced putting forth its stem for flowering. It is a fine large specimen and favorably located for a perfect blossoming.

rapid enhancement of values. Those who were fortunate to sell their clips before shearing, have probably done quite as well as those who have clips yet to sell. The sudden appreciation in prices choked the demand before it had fairly opened for consumptive purposes. The large direct receipts of Australian wool at New York and Boston, and the heavy indirect receipts of the same by way of San Francisco, through the operation of the steamship line, coming as they did at a time when the demand would have naturally turned upon California wools, introduced an unexpected element in the Eastern markets, which was unfavorable to our wool operators. Besides, the agitation of the tariff question rendered manufacturers extremely cautious about buying beyond present wants. Now that the Australian clip has been generally marketed, and the views of Congress on the tariff question are pretty well understood, to-

CORRESPONDENCE.

A Trip through Contra Costa, Solano, Napa and Yolo Counties.

Having had occasion, during the last week, to make an excursion through portions of the above counties, I will give you a brief sketch of the general appearance of the country, crops, etc., at this time.

Passing out on Telegraph avenue, in Oakland, through the cañon near the Deaf and Dumb Asylum, over the first ridge of the Coast Range, the land is uneven, so broken and precipitous, in fact, as to be fit for nothing but grazing, but for that purpose it seems excellent, as the grass is looking fresh and green, and the numerous herds of cattle that cover the mountain sides, far up to their summits, are in fine condition; but I saw few or no herds of sheep, and no better range for these useful animals could well be found; in fact, the rolling, broken surface of these lands seem much better suited to sheep grazing than to any other kind of stock. This appearance of country continues until you reach the neighborhood of Lafayette, where there are occasional small valleys where the grain crops look well. Similar to this is the general appearance of the country until we reach the fine, fertile valley that leads into Martinez. All along, the crops of wheat, barley, corn, etc., were looking very promising, as well as the show of fruits. No traces of damage by frost were visible.

Dr. Streutzel's Alhambra Vineyard.

We made a call at the Alhambra Vineyard and Fruit Grounds. They appear in as fine condition as any that we have seen in the State. Dr. Streutzel has over thirty thousand bearing vines, all in good condition, and promising a heavy yield of fruit the present season; he has some two hundred quince trees that seem very prolific, besides quantities of apples, pears, plums, cherries, peaches, apricots, almonds, oranges, lemons, olives, and in fact almost every variety of fruit that can be named or produced in this genial climate. We also saw a good-sized cork tree, the first we have seen since we left the cork forests of the "Land of the Moor." The only drawback we noticed to a prosperous crop, was the swarms of small caterpillars, that appear by the million, apparently on the peach trees, eating the leaves off clean as they go; and it seems difficult to expel them. They are only about half an inch in length, and no larger around than a fair sized ant. The Doctor has also to sulphur his grape vines three or four times during the season to prevent mildew. This we think, might have been obviated if the vines had been planted on the hill sides. He has fifteen hands constantly employed, and twenty during the season for gathering the fruits. Still he makes his place profitable, and what he does, he does well.

We stopped at Martinez over night, and next morning, at 8 o'clock, we crossed over the ferry to Benicia, with our own conveyance, and, on via Vallejo, Suscol, and Napa, passing the fine country residence of W. D. Walbridge, Esq., Col. Estee, and Tilden, to

Glen Alpine Rancho,

A mountain ranch of ours, about five miles above Napa City, on the Napa and Berryessa Valley County road. The grain fields all along our route were looking as fine as could be desired; the vines in Napa Valley that had been nipped by the frosts a few weeks before, are renewing their verdure, but it is feared, still, that they will make but a partial yield of fruit the coming season. On this mountain range, and places adjoining, which are some fifteen hundred feet above the level of the Bay, the frosts were slight, and did no damage at all. Potato tops kept green all winter, and grape vines were not injured in the least. Mr. Hunt, an adjoining neighbor, has as fine a patch of one or two thousand blackberry vines as we have ever seen of the Lawton variety. They commenced bearing the last year, were very prolific and of excellent quality, and promise well this season. As "Glen Alpine" is still in its native wildness, presenting only wooded hills, and shaded dells and rocky gorges and picturesque glens and jungles wild, with cold mountain springs oozing out of the

rocky precipices amid fine groves of wild-wood trees, the oak, laurel, madrona, manzanita, and the petite hazel-dells—all this normal wildness we have not yet sought to disturb. It is about as much as we can do to make the "Woodman Spare that Tree," and to prevent their stealing and carrying off the wood, as they have done by the cords and scores of cords. But we are after them, and they had better "stand from under." Adjoining us on this same mountain range is a "lone, lorn widow" with nearly half a dozen small children, carrying on her ranch as well as the best farmer to be met with. She has fine fruit and vines and vegetables and a goodly stock of cows, and seems as cheerful and happy as though she were "monarch of all she surveys." She can handle a hoe or a musket equal to the best backwoodsman of the mountains.

Diverging from the Berryessa valley road, near the northeast corner of our ranch, where we discovered some sort of a mineral spring, we passed through

Wooden Valley,

A beautiful little plateau which seems scooped out of the summit of the mountains; contains, I should judge, some 2,000 acres of very fine land, in a good state of cultivation. The crops here, as elsewhere on the route, looks as promising as could be desired. Then on our winding way, three miles further brought us to

Gordon Valley.

Most of this valley is embraced in the ranch belonging to Nathan Coombs, Esq., of Napa. It is in a fine state of cultivation, and under the superintendence of his most competent manager, A. J. Raney, or Jack Raney as he is familiarly called, must make profitable returns each year, although he says this year is an exceptionally poor year; that the crops will not be equal to those of last season; too much rain and too long cold weather is assigned as the cause. Mr. R. informs me that something like the Texas cattle disease had suddenly deprived him of eight or nine of the finest horses of the ranch. Luckily the famous Lodi was not among them. We were hospitably entertained by this intelligent farmer, where we spent our third night, and next morning we started up the valley, passing a small ranch of ours adjoining the Coombs' domain, and on through Ragged Cañon (truly an appropriate name, in every sense of the word,) about eight miles, until we reached

Pulah Canon,

Then down this cañon about eight miles, to its mouth, passing the "Devil's Gate," a toll-gate, about half way; though it seems absurd to those who travel over this rocky, uneven, dangerous road, to hear it called a toll-road. There are a few patches of vegetation along the banks of the Putah, through this rough cañon, but they do not amount to much until we reach the fruit and vegetable ranch of Mr. Seaman, near the mouth of the cañon. Here some of the earliest fruits and vegetables produced in the State are raised; as, also the old place adjoining, formerly belonging to Milton Wolfskill. We called at the next place below, lately owned by Mr. Wiggins, which, also, is one of the earliest fruit ranches in the State. It is kept in fine condition, and they had been shipping apricots, cherries, etc., to San Francisco since about the first of May. In this neighborhood, on the Yolo side of the creek, is our Grand View Park Ranch, on which we have kept sheep for the past few years. We have a table of the rain gauge and the range of the thermometer kept on this place, which we may at some future time give a synopsis of, so that your readers may learn something more definite of this early region, where mature the earliest fruits and vegetables, and grain crops in the State. All the crops thus far are promising a heavy yield, although the crops of fruit, vegetables, etc., are later maturing this season than usual.

Recrossing the Putah into Solano county, we went over a wheat field we have there, of some eight hundred acres, and a finer show for a large crop we have nowhere seen. The six hundred acres that were summer-fallowed stands as thick and stout as could be desired, much of the grain being from four and a half to five feet high, the heads long and well-filled, and no foul stuff to be seen among it. The portion that was plowed and sown after the rains, being so late, does not give so fair a promise. All the crops in this neighborhood, among these rolling hills, are looking well; and it is to be hoped, as the ground is now so thoroughly shaded and sheltered by this heavy crop of verdure, that they will not suffer from the drying north winds, that sometimes do

mischievous. Grain is never troubled with rust in this dry region. These rolling hills also produce good crops in dry seasons, last year the yield being 25 bushels to the acre.

On nearing Vacaville some of the wheat crops seemed badly choked with weeds; and on some portions of the plains in that region the crops are rather light. Grain in the vicinity of the mouth of Putah cañon will, from appearances, be ready to harvest early in June.

At Vacaville we met Mr. Miller, the veteran pioneer fruit-grower of Pleasant Valley; he says his fruit prospects are as promising as he could wish; had no frost to do any damage.

Vacaville,

Though not quite the most enterprising town in California, yet it has natural advantages possessed by few. In our way of thinking, and we have spent many weeks there, at various seasons of the year, it has a healthful, cheerfulness of climate that few other places can boast of. In summer the days are rather hot, but the nights always comfortably cool.

Leaving our conveyance at this place for future use, my son (my travelling companion) and myself took the cars at 7 A. M., and before 12 we were in San Francisco.

T. H. H.

Letter From L. L.

[Our Lady Correspondent.]

Nicasio Valley—Dairy Farms—Nicasio Indians—The Water Cure—Etc.

Nicasio Valley may be called one of the loveliest valleys in the Coast Range, the climate is pure and delightful, and made invigorating by the fresh breezes of the sea, as they come over the lowlands from Tomales Bay. Nicasio Valley lies about fourteen miles northwest of San Rafael—the stage line from the latter point passes over the spurs of the mountains, with the grand old mountain Tamalpais on the left—all the nooks and pockets of the hills are settled with farmers or rather dairymen, and the whole country affords the best facilities for the business. Leaving the Olema road ten miles north of San Rafael, the Nicasio road passes over an abrupt and lofty arm of the mountains and plunges directly into the winding, soft-aired Nicasio Valley—little streams are chattering down the thinly wooded canon—while meadow lands spread out between abrupt foothills, and narrow off far up the gulches. Good farm houses with blooming orchards and tastefully ornamented grounds appear on all sides. Herds of cows cover the hillsides. The surroundings of the valley are peculiarly abrupt, sharp, huge rocks jut out of the softest meadow soil, and shoot up from the smoothest of grasslands in a rugged and bold manner. Along the creeks large spreading oaks are shading the grounds and give to the valley a picturesque and lovely appearance.

The Dairy Farms

Are numerous—in fact the whole interest of this section of Marin is the dairy interest—but there are no very extensive dairies; here in the central portion of the valley, the nucleus of its life and centre of its interest, the little settlement is made up of one church, the hotel, now the Nicasio Water Cure, a post office, store, butcher shop and school house. Circling around this settlement and in close neighborhood are many flourishing dairy farms, and one cheese factory—most of dairymen milk from 40 to 150 cows each. Six miles from the Nicasio P. O. is the pattern dairy of the township, owned by a Capt. Allen, who milks 300 cows, and the butter making is mostly done by machinery. Two miles from the same point winding around the base of jutting hills, the dairy of Mr. Schroyer is found; here is a sample of industry and taste; Mr. S.'s residence is a beautiful house nestling under tall redwoods, presenting a handsome front with double bay windows, and pleasant porches around the building, giving the whole a look of rural comfort and luxury; the milk house is a model of order, convenience and neatness. Such rows of pans of sweet milk! such cream! such delicious draughts as we took, given with a hearty welcome! this was nothing like the city milk and water for which we are taxed \$3, per quart per month. The gentlemanly proprietor, told us he milked 60 cows; paid his exclusive attention to butter making. All of these dairy ranches, and butter manufactories are blessed with the coolest and purest of water, which is conveyed into and around the milk rooms in every possible manner, conducive to cleanliness, purifying the floors, cleansing the atmosphere and cooling the temperature during the hottest weather.

Nicasio Indians.

The tribe of Indians that formerly inhabited the valley is nearly extinct—only a few are left, and they are very old, living on a small reservation two miles from the settlement. Nicasio was the chief of the tribe—the name signifies "a ranch without cattle." We paid a visit to the reservation and found two living curiosities in the shape of aged Indians—one old fellow who claims to be 120 years of age lays helpless in his hut, or out in the sun, without a thread of clothing to cover his withered attenuated

form. He remembers the founding of the San José Mission, and other early incidents; he is a time-worn specimen, and seems to have outlived his years. Companion in decrepitude, is an old blind woman, who sits almost motionless from morning until night—one constant night, to her—apparently nearing 100 years of age. Dried meats, seeds and roots keep alive the mortal remains of the Nicasio tribe.

Nicasio Water Cure.

The Nicasio Hotel, central figure of the valley, has been leased for a term of years to Dr. Wm. J. Young for a water-cure institution, and carpenters, plumbers, whitewashers and painters are busy in renovating the place. The house is capacious, having delightful location, wide halls, roomy porches and large ball-room; beautiful gardens and magnificent oaks surround the house, while a spring in a neighboring hillside supplies the hotel with water. There could be no better place on the coast for an institution of this kind, and this is the only regularly conducted water-cure in the State. Patients had commenced pouring in before we left.

Etc.

Nicasio Valley was originally the property of Mr. Black, who settled there as early as 1833. A man by the name of Miller seems to be the most extensive property holder at the present time; only 12 miles from San Rafael, and 14 from Petaluma. Stages leave Petaluma Tuesdays and Fridays, at 2 P. M. On Mondays, Wednesdays and Saturdays, the steamer *Contra Costa* leaves San Francisco at 1 P. M., for San Rafael, at which place take the stage at 2.30 P. M., and reach Nicasio at 4.30.

Tamalpais lifts its shapely apex far above all the peaks of the broken range, and at any hour is a pretty picture, sitting firmly against the sky-dome, bathed in all the hazy tints of its realm. A grove of redwoods fills up a "hand-breadth of a valley" on the San Rafael road, and very soon the railroad to Olema will pass within five miles of Nicasio valley. Trout in the streams, robins and meadow larks in the trees, warm, soft air, and a place altogether lovely. All the farmers of the valley take the *RURAL PRESS*; it is the paper they swear by, and we honored them for their choice of a "swearing subject." There are still many acres of good ground, good pasturage in this section to be had at moderate rates, that would make good homes for some one. All in all, Nicasio Valley is a pleasant bit of paradise worth visiting, and especially worthy of all we have said of it.

L. L.

Small Fruits—Continued.

EDITORS PRESS:—To continue my remarks in a former paper, I will add that *cherry currants* have done well with me on both light and heavy soils. In San Lorenzo, where this choice variety of currant has found a natural home, the land is moist and loose, and needs the cultivator principally. Here we plow and cultivate, keeping the ground moist by irrigation, when needed, and mellow by cultivation, the two apparent requisites for success in a good soil, notwithstanding an opinion has prevailed to the contrary. The conditions must be right in all cases. And then to "prove all things, and hold fast that which is good," is the province of the fruit-grower; and nothing less should satisfy him in a new locality. Then, "If at first he don't succeed, let him try, try again."

Of *blackberries*, I have had none of promise besides the well-tried *Lawton*, except the *Kittitiny*, and perhaps the *Early Wilson*. The *Kittitiny* is large and sweet, and will not be discarded, although the fruit sunburns, often becoming discolored on one side or part of the berry. It has taken me three or four years to get them under way, and the *Early Wilson*, a half-trailing plant, has not been large enough to withstand the extremes of heat and cold of the last two years. This year is a test one; and at present it looks like a complete success. The blossoms came out very early, and as thick as could be on the vines, and the berries look plump, as if developing well.

Among *raspberries*, the well-tried *Falstaff* takes the lead. The *Philadelphia* proves productive, though much inferior in size, and has nothing in quality to recommend it.

Kew's Giant, from large to very large, is too dark leaden colored to be a favorite, and too soft to bear transportation. Its flavor is peculiar, and will suit some palates well, perhaps all who cultivate a taste for it. May do for the amateur, but too imperfect in the impregnation and consequent productiveness for market purposes.

The *Franconia*, similar to *Falstaff*, is a solid berry, but dryer and less productive, and consequently less profitable.

No other varieties, worthy of especial favor or mention, unless it be the *Yellow Antwerp*, the color being unfavorable for a market berry, but good for the table for those who like it.

Of the *Black-cap* family the *Doolittle* is the best. The *Thornton* is too small and dry and unproductive; the *Yosemite* too unapproachable on account of its wild nature, armed, as it is, with thorns. It is a rampant grower, and the berries are large, but of poor color. The *Doolittle* is the best flavored, most productive, and has the natural bloom and look of the famous wild varieties that abound in New York and other States. But I find none of the black-caps profitable for market. More anon. I. A. W.

SCIENTIFIC PROGRESS.

New Sensitive Singing Flame.

Philip Barry described in *Nature*, of last November, a very sensitive flame, produced by placing a piece of ordinary wire gauze on the ring of a retort stand, about 4 inches above a Sugg's steatite pin-hole burner, and lighting the gas above the gauze. At the least noise the flame roars, sinking down to the surface of the gauze, becoming at the same time almost invisible. It is very active in its responses, and being rather a noisy flame, its sympathy is apparent to the ear as well as the eye. W. E. Stevens writes to the *Am. Jour. Sci.* that a simple addition to this apparatus gives a flame which, by slight regulation, may be made either (1) a sensitive flame merely, that is, one depressed and rendered non-luminous by external noises, but which does not sing; (2) a continuous singing flame, not disturbed by outward noises; (3) a sensitive flame, which only sounds while disturbed; or (4) a flame which sings except when disturbed. The last two effects are novel. To produce the flame it is necessary merely to cover Barry's flame with a moderately large tube, resting lightly on the gauze. If the gauze and tube be raised, the flame gradually shortens and appears less luminous, until at last it becomes violently agitated and (2) is produced. The sensitive musical flame (3) is produced by lowering the gauze until the singing just ceases. It is in this position that the flame is most remarkable. At the slightest sharp sound it instantly sings, continuing to do so as long as the disturbing cause exists, but stopping at once with it. So quick are the responses that by rapping the time of a tune, or whistling or playing it, if the tones are high enough, the flame sounds faithfully at every note. By slightly raising or lowering the jet the flame may be made to sing at a hiss, the rattling of keys, folding paper, or even moving the hand over the table. On pronouncing the word "sensitive" it sings twice; and in general, interrupts the speaker at almost every "s" or other hissing sound. All the experiments can be made under the ordinary pressure of street gas, three-fourths of an inch of water being sufficient.

VARIETIES OF MATTER.—We extract the following from an article by Prof. Morton in the May number of the *Am. Jour. Sci.*: Matter exists certainly under two and probably under three varieties: *ordinary or gross matter*, directly recognized by our senses; *universal or luminiferous ether*, filling all space and pervading the interstitial spaces of all bodies of ordinary matter, the existence of which is inferred from optical phenomena; and *electric ether*, associated with all bodies of ordinary matter, whose existence is inferred from electrical phenomena. Possibly these varieties may not differ in their essential nature. It is at least conceivable that the atoms, so called, of ordinary matter and of electric ether are condensed groups of atoms of the universal ether; and hence that there is essentially but one form of matter in existence. It may be that the electric ether, the supposed agent of electrical phenomena, may be shown ultimately to be identical with the luminiferous ether; but in the present state of physical science they cannot be so regarded. It is supposed by some physicists that electrical phenomena may consist in some mode or modes of motion of the atoms of ordinary matter, and that the forces of electric attraction and repulsion may originate in such motions. But this notion cannot be regarded as anything more than a conjecture. The existence of an electric ether has not been as conclusively established as that of the luminiferous, but all the phenomena give decided intimations of the operation of such an agent, and thus serve to confer upon the hypothesis of an electric ether a high probability.

AN EDUCATIONAL EXPERIMENT.—A novel and interesting experiment in the field of elementary instruction has just been resolved upon in Saxony. Hitherto, as everywhere else, so in that small but highly developed kingdom, the youth of the lower order, upon being apprenticed to a trade, have been left at liberty to forget what they learned at school. Attendance at Sunday schools and evening instructions provided by the State, and charitable societies, were perfectly optional. By law this liberty is abridged, and compulsory attendance at evening schools exacted for a period of three years. This is, we believe, the first time in the annals of the world that an attempt has been made by a State to extend the education of the humbler classes beyond the merest rudiments, and after they have entered upon the business of life.—*Er.*

NARCOTIC ACTION OF TOBACCO.—Vohl and Eulenburg have investigated the narcotic action of tobacco, especially examining the action of tobacco smoke. As the result of their analysis, they are led to the opinion that the disagreeable symptoms of the incipient smoker and the chronic affections produced by excessive smoking, as well as the poisonous effects of tobacco juice when swallowed, are due to the pyridine and picoline bases, and not to the nicotine. They explain the fact that stronger tobacco can be smoked in cigars than in a pipe, by finding that more of the volatile bases are present in pipe smoke, more especially of the very volatile and stupefying pyridine; while in a cigar little pyridine and much collidine are formed.

ANILINE COLORS POISONOUS.—According to Drs. Pohl and Eulenburg, of Cologne, aniline colors are poisons. Aniline itself is an acknowledged poison, and all coloring matters containing unchanged aniline are therefore capable of poisonous effects. In the preparation of the colors the strongest oxidizing agents are used, and of these many are violent poisons, as arsenic acid, chlorides of zinc and tin, antimony and lead compounds. If any of these substances remain in the manufactured coloring matter, of course the article is dangerous; not of itself, for this is innocuous, but from the metal poisons it contains, and from the acids combined with them, as hydrochloric, acetic, arsenious and picric acids. Moreover, many coloring substances are manufactured from the residues of aniline factories, and these contain the largest amounts of poisonous matters. These last, on account of their less cost, are extensively used, principally for red carpets, toys, common articles of confectionary, bonbons, drops, etc.; also for toys made from transparent rubber, and for nursing bottles. Cases of poisoning from woolen and mixed goods, dyed with aniline colors are known. The same is true of phenil colors, and the subject demands strongly the adoption of sanitary regulations.

EFFECT OF COLORED LIGHT ON VEGETATION.—The opinion of Poey's that violet light has a most favorable effect upon the growth of animals and plants led a Mr. Bert to make experiments (not yet quite concluded) on a large scale. He placed 25 plants of different families, which differ greatly in respect to need of light, in compost beds, covering these, first, with common glass; second, with dull white glass; third, with blackened glass; fourth, with red; fifth, with yellow; sixth, with green, and seventh, with blue glass. The red, green and blue were, examined in the spectroscopic, almost monochromatic; but the yellow glass transmitted all other colors, only more weakly. Experiments carried on from June to the end of August gave the following results: In general, the green light is as bad for plants as is darkness; red is less injurious, though decidedly hurtful; then comes yellow; least injurious is blue. But all colors are unfavorable for plants, except when combined in the proportions contained in white.

AURORAL DISPLAYS IN THE U. S.—The *American Journal of Science* gives a table of the auroral displays in the United States, in the year 1871. The total number of days is 170, divided as follows:

Jan.....11 Days	July.....9 Days
Feb.....13 "	Aug.....12 "
March.....15 "	Sep't.....13 "
April.....16 "	Oct.....15 "
May.....17 "	Nov.....19 "
June.....17 "	Dec.....12 "

During the past three years the number was as follows:

1869.....192 Days
1870.....233 "
1871.....170 "

The correspondence of these results with the number of spots visible on the sun's surface is quite noticeable. The disturbance of the sun's surface attained its maximum in 1870, and is now rapidly declining. It is anticipated that the number of auroras visible in the United States in subsequent years will exhibit a similar decline.

THE PARCHMENT FLUID of the chemist C. de Sonvageon is said to have the property of preserving paper from the injurious effects of moisture. Drawings which can be injured by rubbing are moistened with the fluid on the back side at first (the fluid is applied by means of a sponge), or if this is not possible a paper is laid over them and the fluid applied to this. After the first coat has dried on, which requires about twenty minutes, the fluid can then be applied without further precaution. If the drawings are not liable to rub out, the fluid can be put on directly in the beginning. Paper thus treated has, besides its unsusceptibility to injury from moisture, the following valuable properties: 1. Spots of all kinds can be removed by washing with soap-water; 2. Drawings in lead or chalk can be permanently fixed; 3. Paper treated with two or three coats of the preparation can be written on with lead or ink, and the writing can be washed off.

THE LOWEST TEMPERATURE at which seeds can sprout has been generally taken to be 4° or 5° Reaumur (41° to 43° Fah.). Decandolle found that all the seeds with which he experimented, sprouted at a temperature of 4° or more; only the *lepidium sativum* (garden cress) and *linum usitatissimum* sprouted at 3°, and 5 out of 30 seeds of the *sinapis alba* (white mustard) at 0°. Uloth, according to the *Flora*, on clearing out an ice-cellar, found in pieces of ice fully sprouted seeds of maple and wheat, which flourished when transplanted to soil. The cellar was fully dark and the temperature zero (32° Fah.) at the spot where the seeds were found.

THE THERMOMETER AT HIGH ALTITUDES.—The higher we ascend, the colder it becomes; and yet at very great elevations the rays of the sun exert a heating power greater than that which they are found to produce in the valleys. Prof. Piazz Smith found, that on the top of Teneriffe, at an elevation 10,000 feet above the level of the sea, a thermometer exposed to the direct rays of the sun showed a temperature of nearly 200° Fah.!

MECHANICAL PROGRESS.

More About Lubricators.

The best efforts of both mechanics and chemists have been directed to the preparation of a perfect lubricator, and although much remains to be accomplished, yet the results already attained are exceedingly satisfactory. For light machinery the requirements are that the lubricating material shall be a good anti-friction agent, not easily deoitrated by the combined action of friction and air; and for some purposes, at least, such as sewing machines, that it shall be cleanly. These conditions are most perfectly fulfilled by well purified oils, such as sperm or olive. The gummy and gelatinous matter, as well as all moisture, must be thoroughly removed, and oil in this condition is readily found in market, being prepared for the use of gunsmiths, clockmakers, sewing machine workers, etc. Lubricating material for heavier machines is still more easily found of tolerable quality, and it is only when we come to really heavy work that we again find it difficult to obtain a really suitable article.

All surfaces which are pressed together with great force should be lubricated with a comparatively hard material; otherwise the lubricator will be expelled from between them, and the friction will soon become greater than at first. Hence, instead of liquid oils, the heavy semi-fluid petroleum has been used with great success; and where matter of animal or vegetable origin is employed, the solid fats, such as lard, tallow, palm oil, etc., are preferred to the true oils. Nor does the intelligent mechanic stop here. In order still further to harden the oil or grease, he employs alkali, and by the use of caustic soda he converts it into a mild species of soap. But where the work is heavy, and especially where the surfaces are soft, the best lubricating material is plumbago. We have seen it tried on wooden surfaces, such as wood screws, which will perform at least twice as much work after being carefully rubbed with a mixture of soap or tallow and plumbago.

In the case of wooden bearings nothing that we have ever seen tried, lessens the friction as well as plumbago. The same is true in regard to cast-iron surfaces such as the ways of heavy planers. These often cut in such a manner as to become almost unmanageable, in which case a little really good plumbago remedies the evil at once. Poor plumbago, on the other hand, only aggravates the evil. The use of plumbago for this purpose has long been known, but until quite recently, no effort seems to have been made to call general attention to it.

Metalline.

The famous anti-attrition used in Europe consisted simply of plumbago and lard, and at different times attempts have been made to create an excitement by the announcement of a new lubricator under some high sounding names, such as metalline, mineraline, etc.; the entire virtue of such materials, where they possessed any virtue at all, being due to plumbago. A striking example of this was given a few months ago, when almost every industrial journal in this country and Europe rang with the praises of metalline; although to judge by the final result, these laudations were based upon a very slender foundation of fact.

But although we have particularly recommended the use of plumbago for heavy machinery, it must not be supposed that it is unfit for lighter work. Sixty years ago, M. Lewis Herbert, of Chelsea, Eng., used it in a very refined state as a substitute for oil, in diminishing the friction of the rubbing parts of the clock. He applied it to a sidereal time-piece, in January, 1816, between which period and 1827 the time-piece was cleaned three times without renovating the plumbago; the friction places being only wiped with a fine muslin rag. In a communication to the Society of Arts, in 1827, eleven years after the plumbago had been applied only once, he states that the time-piece was going as well as ever. He found great difficulty in applying it to the jewelled pallets of the escapement, but got over this by applying it to the friction plane of the teeth of the swing-wheel; and he adds, "so, ever since the clock has gone without oil."

We feel assured that the principal reason which has hitherto kept plumbago from being generally used as a lubricator has been the difficulty of obtaining a good article. Until within a comparatively recent period, no effort has been made to place before the public an article prepared with special reference to lubricating purposes; but we are happy to observe that a movement has been made in this direction, and really suitable specimens can now be readily obtained.—*Handicraft.*

VENTILATION AND HEATING.—It is said that an apparatus has now been perfected which may be applied to cooling the air of theatres, halls, and all public or private dwellings. One of these machines will either produce 200 pounds of ice per hour, or will furnish in the same time 33,000 cubic feet of air, cooled to a temperature of 33 degrees Fahrenheit. It is probable that in a few years we will turn on from the same registers the cool air in summer and the hot air in winter. The application of such an apparatus to the pipes of a heater would be extremely simple, and furnish just what we want when the heater is off duty.

KEENAN'S BOILER COATING.—Much value is assigned to a substance known as Keenan's Boiler Coating, as a means of preventing the radiation of heat from steam-boilers, and the saving, in consequence, of fuel as well as of time in bringing steam up to the proper degree of tension. The substance is a pulp composed of paper, oil, and certain chemicals, and is laid cold on boilers, steam chests, steam-pipes, or any other article that is to be protected from the outer atmosphere to the thickness of an inch and a quarter; on superheaters two inches are required. The boiler, however, must be kept warm during the coating process. When the pulp has properly set it receives three coats of paint, and can, if necessary, be grained and made to look ornamental.

The editor of the London *Mechanics Magazine* has recently examined certain boilers coated with this substance, and found that with boilers in actual operation the exterior exhibited a gentle warmth just perceptible to the touch. He also was informed that it was the practice of the stokers to draw their fires at half-past three in the afternoon and to close the dampers, the steam being then at about thirty-five. On resuming work in the morning at five o'clock, A. M., the gauges generally showed twenty-five pounds of steam, or a loss of only ten pounds during the night as the result of radiation.

WALL PAPER IMPRESSIONS.—About one year ago, some fertile-minded genius hit upon the idea that the most perfect imitations of different kinds of wood for wall paper would be impressions taken from the wood itself. With this notion in his head he went to work, and the result is, an exact copy of the surface of the plank in use. Thus a walnut plank is planed off and from its surface is printed thousands of sheets of wall paper. The same process produces *fac similes* of oak, mahogany, maple, and in fact, all kinds of timber. We yesterday examined specimens of this beautiful work at the paper house of Miller & Badger, in this city, and confess our astonishment at its completeness. The copies are like printed sheets from engraved plates. When hung and varnished this class of paper presents a rich and beautiful appearance.

STEAM ON CITY RAILROADS.—On city cars the great and positive objection to steam has hitherto been the noise of the exhaust steam. This noise is entirely suppressed by an appliance adopted by L. J. Todd, Leith, England. He uses a fan blast and drives the fan with a turbine, by changing the blast nozzle from the funnel, so as to cause it to discharge the exhaust steam against the turbine. The waste steam from the fan is led into the funnel by an opening, the area of which is so large as to positively prevent the noise usually occasioned by exhaust. It will be seen that this is also an excellent method of applying blast, as it is increased or diminished just in proportion to the rate of speed, and ceases when it is not wanted. An auxiliary pipe from the boiler direct can be used to drive the turbine if desirable when the engine is standing still.

WHY RAILROAD BRIDGES BREAK.—A correspondent of the *Business Guide* submits the following theory: It is the custom to allow trains to approach the bridge at full speed, slackening up only when immediately before and while on the bridge. The brakes are thus applied to the wheels while on the bridge; the rails on which the wheels are running must therefore resist the momentum, and as they are fastened directly to the bridge, a tremendous longitudinal strain is brought to bear upon it. Especially is this the case when the locomotive has passed over and the train, with brakes down, is still on the bridge. To illustrate this philosophy, take a small wagon and place it on a light table, lock the wheels and attempt to draw it across the table. It will be readily seen that the table is drawn over in the same direction.

BURNT CAST STEEL that has been spoiled by overheating can be partially restored, it is said, by heating it over and quenching in water four or five times, each of less extent than the first overheating and decreasing; lastly, hammering the steel till nearly cold, to give the greatest condensation before hardening. Some prefer the steel thus recovered for cutting tools, and the treatment really produces a remarkable change, as a fragment of the same bar in the spoiled state will be extremely coarse, and another of the restoration as extremely fine.—*U. S. R. R. and M. Register.*

A CEMENT of great adhesive power may be made by rubbing together, in a mortar, two parts of nitrate of lime, twenty-five of water and twenty of powdered gum arabic, this forming a transparent cement of wonderful strength and applicable to wood, porcelain, glass and stone. The surfaces to be united should be pained with the cement and firmly bound together until the drying is complete.

THE VALUE OF PIG IRON manufactured in the United States last year was \$75,000,000. The product of the rolling mills and forges was \$63,000,000, the value of other manufactures was \$762,000,000, and the entire value of manufactured iron for the year was \$9,000,000.

FARMERS IN COUNCIL.

Oakland Farming, Horticultural and Industrial Club.

[Reported for the PACIFIC RURAL PRESS.]

Our last week's report of the meeting of Friday evening, May 17th, was incomplete, owing to the writer's absence during a portion of the evening. The following, which was prepared to accompany our report last week, will be found equally interesting now:

Wheat Raised from Patent Office Seed.

Mr. Christian Bagge presented specimens of wheat raised by him from seed received from the Agricultural Department, at Washington. He stated that he planted late in February, in adobe soil, near San Leandro, one pound of Bearded Saissette winter wheat, grown in France, and raised 52 pounds. At the same time he planted White Touzelle winter wheat, and had a return of 70½ pounds for one. To test the comparative value of the new varieties he planted some of the red Australian commonly cultivated here, and had a return of 78 for one.

The Saissette he considers too dark to be of value for market. He continues his experiments, as the varieties were both winter wheat, and were not sown early enough to give them a fair trial. A good white wheat is very desirable, as being the favorite for the English market. Here the millers think that the red wheat give the most flour.

A specimen of Selenite was presented by one of the ladies.

The subject for discussion for the evening was

Irrigation.

Mr. Bagge said he had tried irrigation to some little extent, and did not think it would pay, as our sandy soil lets the water through it. He thinks thorough cultivation is better than irrigation for keeping the soil moist. Mr. C. H. Dwinelle said that Mr. Bagge took it for granted that the soil was moist below, and asked if Mr. B's land was not near the salt marsh.

Mr. Bagge said it was on Fourteenth street.

Prof. Carr's Remarks.

Prof. Carr said that we were apt to draw general conclusions from limited experience. Persons in different localities may reach very different results from the same experiments. Plants are largely composed of water, and must have it from some source. The cabbage contains about 90 per cent. of water, green pine 40, and seasoned pine 20 per cent. Even when apparently dry, soil holds a considerable amount of water, which is called insensible or hygroscopic moisture.

The following table shows the hygroscopic capacity of the substances which make up ordinary soils, as determined by careful experiment:

Quartz sand.....	0
Gypsum.....	1
Lime sand.....	3
Clay soil (60-100 clay).....	24
Loam.....	35
Heavy clay soil (80-100 clay).....	41
Garden mould (7-100 humus).....	52
Pure clay.....	49
Humus (decayed vegetable matter).....	120

One very noticeable point in this table is the low capacity for holding moisture which gypsum has, which is directly opposed to the common notions on the subject. Its value as a fertilizer depends on other qualities.

The hygroscopic capacity of soil varies with the temperature, as shown by the following table: 1,000 parts of common soil hold—

At 55 deg.....	13 parts moisture.
A 66 deg.....	11.9 " "
At 77 deg.....	10.2 " "
At 88 deg.....	8.7 " "

The following table for hair or wool shows how a man who buys wool at a temperature of 32 degs. may get 12 pounds more of water in every thousand than he would if he bought at 87°: 1,000 lbs. hair or wool hold—

At 87 deg.....	7.7 lbs. water
At 59 deg.....	13.5 " "
At 32 deg.....	19.3 " "

Moisture moves from below to the surface of the soil by capillary attraction. The finer the soil is pulverized, the greater the freedom of this circulation. Nourishment for plants, which is dissolved by water, is carried down in the wet season and brought up again in the dry season, when the water rises to supply the evaporation from the surface. This is a very important consideration in California, as otherwise cropping would soon exhaust the soil. Practically, the soil is in some cases 20 feet deep. A crust is often formed from soluble substances brought up by the water and left when it evaporates. This accounts for many of the alkaline deposits of this coast. Water is condensed from the air by finely pulverized soil. Too much water makes soil cold. If after a very dry season the rain is not sufficient to wet the soil so that the moisture from above meets that from below, irrigation may be of great importance.

The above is but an imperfect sketch of Prof. Carr's very interesting remarks.

Mr. Dwinelle described a method of underground irrigation tried at Berkeley. The channels were made of strips of sheet-iron, a few inches wide, bent so as to make a V shaped trough. This was laid at a depth of 1½ to 2 feet on a redwood board, with the angle of the trough up. The water could then ooze out at the sides and saturate the soil. He

considered this style of irrigation, with a drain to carry off surplus water, and thorough cultivation of the surface, as the best for most vegetables, berries and trees. The troughs can be cheaply made of damaged iron, and coated with coal tar to prevent rusting. Some have used tile pipes.

Mr. Jordan asked why partial irrigation should be an injury to vegetables, as it often appears to be. Prof. Carr thought it was because the roots were kept near the surface, and when irrigation was stopped they had no long roots to draw upon the moisture below.

Mr. Jordan said that he supposed it was because the plants were stimulated and then checked when the moisture became equalized through the soil. For the same reason he considered wetting the seed before planting an injury.

Mr. Dwinelle said that besides keeping the roots near the surface, wetting the surface was often an injury in other ways. On a sandy soil, like that of Oakland, a crust would form which prevented the proper circulation of air and moisture in the soil. On a loamy or adobe soil, a crust would form and then crack to such a depth as to dry out the soil badly. Where surface irrigation is used, care should be taken to stir the soil soon after to prevent the formation of a crust. He thought the best way to water shrubs was to make a small trench about the plant and pour in a bucket of water; after the water soaks away, fill up the trench and cover with loose earth. Most plants will do well in our driest season if watered in this way once in a few weeks. His experience in wetting seeds was directly opposed to Mr. Jordan's. He thinks it a benefit. Mr. Dakin of Ione valley being present, at the invitation of Prof. Carr, made some remarks on irrigation in Alameda and Calaveras Counties. He said that young trees could not be carried through the dry season on these red hill lands without irrigation, but that vines do best without it. Fine crops of grain are raised there by summer fallowing. He saw last year first-rate wheat raised on land that had been cropped a great many years, and still the yield was 36 bushels to the acre.

Capt. Little said that though trees might need watering on the hill lands, he had no trouble in raising them here without it. He kept his land well broken up between them, and did not think it best to smooth it down after plowing.

The next meeting will occur on Friday evening, May 31st.

San Joaquin Farmers' Club.

The San Joaquin Farmers' Club met at the rooms of the organization, Saturday afternoon, at one o'clock. "Whether it were better to thresh grain from the stack, or gathered on the harvest field," was the subject for discussion. Mr. Hitchcock considered the subject was of much importance to farmers, as heretofore, quantities of wheat threshed from the stack became headed and damaged, if not wholly destroyed in the kernel. Mr. Wright sought an expression of the members in regard to the advantages to be derived by putting up unthreshed grain in large or small quantities. Mr. Overhiser stated that he always put up his grain in large stacks. He further stated that there was great advantage to be gained by using the large forks in stacking grain. He favored the use of forks as a means of labor economy. Captain Ketchum said he had a large fork, but never gained anything by using it. This might possibly arise from him not using it properly. Mr. Brannock endorsed Mr. Overhiser's views in regard to the economy of using the large fork in unloading grain from the wagons and placing it upon the stack. He had no experience in regard to the use of the fork in the barn. Mr. Overhiser gave an interesting explanation of the proper manner of handling the fork, and argued that it would do more work than two men. He stated that he had a good and durable header bed as there is in the State, and then called the attention of farmers to the same. To those who desired to purchase header beds the present season, he recommended the pattern of the one owned and used by himself, as being the most convenient and serviceable in all respects.

The following communications dated May 17th, was read: "To the Secretary of the Farmers' Club:—I perceive your Committee, appointed to procure a suitable field of grain near Stockton to test the different threshing machines, have not yet succeeded, or had not up to the 11th of May; and if no other arrangements have been made, I will furnish a barley field four miles from Stockton, and will pay the customary price per bushel for threshing. I concur with Mr. Fairchild's views in relation to having the test made as early as possible, as something new may turn up another year. With respect and esteem, (Signed) THOMAS SEDGWICK, Sr." Mr. Sedgwick's communication was, on motion, received and the Secretary directed to spread the same in full upon the minutes. Mr. Kerrick stated that he had a field of three hundred acres of wheat, which he offered to the Club for the purpose of testing threshing machines, and the Secretary was instructed to notify the Committee on Threshing of the propositions submitted to the Club. Mr. Hitchcock inquired if any other threshers than the "Vibrator" were to be brought into the contest? Captain Ketchum moved that the Secretary be instructed to notify Baker & Hamilton and Treadwell & Co. of the action taken by the Club in regard to testing the various threshing machines. The motion was carried. Captain Ketchum moved that the time for testing the machines be fixed by the Club hereafter. The

motion was carried. Mr. Hitchcock moved that hereafter and until the first of September the Club meet monthly instead of weekly, as at present. The motion was opposed by Mr. Overhiser and Mr. Smyth, who argued that the meeting of the Club should continue to be held weekly. The motion after some discussion, was withdrawn. Considerable discussion arose among the members in regard to damage arising to grain from sweating in the stack. It was concluded that the subject of threshing—whether best from the stack or direct from the header—should be further discussed at the meeting to be held next Saturday. Mr. Overhiser suggested that the Club, next Saturday, consider the question, "The best header." On motion, the Club adjourned to meet at 1 o'clock next Saturday.

San Jose Farmers' Club.

The Club met Saturday at 1 P. M. The Committee appointed to examine into the feasibility of the railroad to deep water. Alviso, made a report of progress. They had found that there was in existence a franchise for the road, but were of the opinion, based upon their investigations, that this could be procured, or else a satisfactory arrangement could be made. They advised the calling of a mass-meeting of the citizens at an early day, for the purpose of agitating the subject. On motion, the report was accepted and the Committee granted further time to pursue their inquiries.

The Committee on the investigation of the sale of the railroad stock asked further time, as another meeting has been agreed upon; granted.

A communication was received from H. G. Wade, of Alviso, in relation to the storage of grain, etc. He would take the grain and furnish sacks for a moderate per cent. for their use. The communication was referred to the Committee on grain sacks.

Mr. Thompson and Mr. Wade advertised upon the *Mercury's* article on the grain sack monopoly, and also upon an article on the same subject that appeared in the *Bulletin* of Thursday. Mr. Thompson had been misrepresented; he said that sacks could be furnished for 16 cts., in San Francisco, instead of "as furnished," which, to the mind of the reporter, amounts to about the same thing. We cannot see any difference.

Mr. Ware followed, and said that from the opposition to the investigation in the newspapers, he was more eager than ever to pursue the investigation. He thought the Committee should be increased to ten.

Holloway thought the farmers were opposed by the newspapers designedly, and the press was influenced by the monopolists. He was in favor of going to work and saving what is now gobbled up by the grain sack monopolists. The latter get vastly rich, while the farmers, who furnish the materials, are poor. The newspapers are subsidized against the farmers.

Thompson was inclined to think that sacks could be furnished in San Francisco for 13 cts., and he wanted the investigation to go on, the advice of the newspapers to the contrary notwithstanding.

Mr. Ryland spoke in favor of the railroad to Alviso, and also on the grain sack question. He favored the opposition to the monopoly.

In the matter of the mowing machine exhibition, the Committee from the Club and the agents for the mowers will confer and make satisfactory arrangements.

Mowing Match.

In the mowing match at Colonel Younger's farm on the Alviso road, on Saturday afternoon last, eight different machines were entered. A. Pfister & Co. entered the "Champion No. 1." Tyler Beach entered the "Wood." Omar Jewell entered the "Kirby." J. P. Spence entered the "World." E. Pomery entered the "Clipper." Chase & Cohoran entered the "Excelsior." A. Pfister & Co. entered the "Champion No. 3," and Anzeras Bros. entered the "Buckeye." A Committee of Judges was selected from the Farmer's Club, consisting of Messrs. Gallimore, J. W. Haskell and C. T. Settle—gentlemen who understand what a good machine should do. The different competitors deposited an entrance fee of \$10 each, to go to the winner—he to donate it to the Farmer's Club. As soon as all the preliminaries were ready the machines commenced operations, cutting the different sections laid out for them. A large number of farmers and others were present to witness the trial. The machines all worked well. The Judges will report their decision on Saturday next.

Diseases of the Horse.

Chronic Founder.

This, as its name implies, is a complaint of slow progress. It is simply contracted feet. The front feet are the only ones often effected, for causes to be shown hereafter.

During the dry portion of the year, the front feet are exposed to the burning heat of the road, and when the horse is brought into the stable, the front feet are still deprived of all external moisture by the stable floor, while the hind feet obtain all they require from the manure. This dryness of the fore feet is the principal cause of contraction. The poor blacksmith is often blamed for it, and when it progresses so far as to cause lameness, many conjecture that the cause was grain or water, yet the principle cause was the want of water, or moisture for the bottom of the feet. The principle fault of the blacksmith, was in making the shoes stay on too long, and cutting away the bars of the foot in fitting it for the shoe.

No shoe should ever be allowed to remain on over three weeks, in the wet portion of the season, when the hoof is growing fast, and never more than four weeks in a dry time, if you wish to keep sound feet. The hind feet are sometimes contracted in long dry seasons by allowing the shoes to stay on too long where the horse is not brought into the stable. To prevent this trouble, first: In shoeing, fit the shoe to the foot, and not the foot to the shoe; second: in paring the foot, cut the bars level with the quarter of the hoof; third: dish the front and sides of the shoe, back to the heel, but let the heel be level, to rest on the bar, as well as on the quarter of the hoof, and in fitting the shoe, bend the heel in, to correspond with the outer wall of the hoof, you will then discover by standing behind the foot that the bar is philosophically made by nature to receive its portion of the weight of the animal in such a way as to prevent the tendency to contraction, by the pressure of the heel of the foot upon the shoe.

Yet, after all this, the sole of the foot requires moisture, to counteract the heat of the dry parched earth. This can easily be applied by stopping the foot when brought into the stable at night; equal parts of blue clay and fresh cow manure, worked into a mortar of proper consistency, make an excellent stopping; any tough clay will answer. Keep the stopping in a tub in the stable, and it is but little trouble, with a wooden paddle, to put a little on each fore foot when the horse is brought in at night.

Proper care will save your horses from all this trouble, also from many other painful diseases of the foot caused thereby, which I shall mention hereafter. There is no cure for contracted feet, yet if the disease is arrested by the above treatment, and the animal carefully used, the inner structure of the foot will gradually adapt itself to its contracted prison, so that the animal may nearly regain its former usefulness. Avoid all tar stoppings; it closes the pores of the hoof, and thus adds fuel to the fire.

San Francisco, May 20.

Crops in Solano County.

EDITORS RURAL PRESS.—In your last issue is an extract from the *Chronicle* of May 18, giving a statement from A. T. Robinson in regard to the crops of northern Solano. Now as an old resident and farmer of northern Solano, I do not like to see things misrepresented. I have no doubt but what Mr. Robinson states matters as he sees them, and thinks that he is correct. Doubtless he travelled through this portion of the country on the Cal. P. R. R.; if so, I do not wonder at his statement of the crops, as the road only passes through a strip of about five miles of good crops. He says that the late sown grain is almost a failure, being from six to eight inches in height. Now I will defy him to find any grain for eight miles north of here and east for five miles, that is less than two and a-half feet high, and that will yield less than twenty-five bushels to the acre. There is very little late sown grain in this part of the country. And the summer-fallow is going to turn out better than for many years past. I have been here for fourteen years, and I think that I can safely affirm that I have never seen a better prospect for a good crop of wheat since I have resided here. The wheat is still very green and promises to fill well. I will admit that on a great deal of land south of this place that the crop will be a failure. But it is on land that we do not count on for a full crop more than once in three or four years. Indeed a great deal of it never has had what I would call a good crop on it. In my last communication I stated there would be in my opinion forty-five thousand tons of wheat harvested within ten miles of this place, and I have seen no reason to back down from my opinion. Indeed I think that it will go over instead of under that amount; much of it will yield over forty bushels per acre, while but little of the area wild of here to Fintch Creek will go under twenty-five bushels. So much for the wheat crop. As to the

Hay Crop

I have not seen as much good hay cut in this section for the last seven or eight years. The hay is of the best quality and will turn off on an average about a ton to the acre. It is offering for a less figure than it has been offered for a number of years, which is the best evidence of an abundant crop. The spring has been remarkably dry but at the same time has been very favorable to crops. It is true that we had considerable north wind, but instead of the dry parching wind that we usually have, it has been cool and frequently followed by light dews. For the last two weeks we have had the sea breeze, which always revives and sustains our crops.

Grapes.

The grape crop also promises to be larger than it has ever been on the plains. The late frosts did not affect the vines and they are hanging very full. The other fruit crop I know will be light. So much for the crops of northern Solano. I cannot speak advisedly of the crops of Yolo and Colusa, but should judge from what I have heard that they will not fall far below our average. Farmers are busily preparing for the harvest, which will commence in about three weeks. The crops are ripening very slow which is another good indication of a good yield. I do not wish to exaggerate, but think that my statement can be verified by figures, and any one travelling through the wheat-producing district at this time will find it about as about as stated above.

OCCASIONAL.

Batavia, May 27, 1872.

AGRICULTURAL NOTES.

CALIFORNIA.

BUTTE.

Enterprise, May 25: SHEEP.—The past winter has been a very severe one on sheep, and thousands have perished for want of suitable care and attention. The absence of shelter in most cases, and want of feed in many instances entailed a heavy loss on the owners. This could and should have been avoided. A little care in providing suitable shelter against the inclemency of the season, and in securing a supply of food to the animals during the heavy rains would have preserved the largest portion of the animals which perished. The time has arrived when sheep ranchers should look to this matter, and secure for their flocks the care and attention needed. One-half or one-quarter of the value of the animals lost during the last winter, if it had been judiciously expended in providing food and shelter for them, would have kept them in good condition until the spring and summer opened.

The wool clip this season has demonstrated the fact that 100 sheep well kept and cared for are of more real profit to the owner than double that number kept in the usual manner. Where the sheep have been poorly kept during the last season, the clip has been short, light and sold for reduced rates. Enough was lost to the owner in this item alone to have doubly paid the cost of keeping them in good condition. We notice in the Eastern papers that the clip from fat sheep commands a premium; let our California sheep growers make a note of this fact.

OUR MARKETS.—Squashes, cucumbers, strawberries, and in fact all kinds of vegetables, except green corn, are now plentiful in the markets. Yesterday we saw new turnips—just from the ranches on Bear river—of an almost incredible size. The ground on which they were grown will produce three crops this season.

EARLY GRAIN.—J. C. Porter, of West Buttes, has a field of wheat which will be ready for harvesting next week. It is calculated the field will average forty bushels per acre. The grain ripens about two weeks sooner around the Buttes than in any other part of the State.

HOME INDUSTRY.—Yesterday J. Briggs shipped 100 cases of castor oil for San Francisco, and 100 cases for the same place the day previous. The oil is of a superior quality, equal to the best in the market. Mr. Briggs has established quite a trade in the article, and will doubtless increase his facilities for producing it.

CALAVERAS.

Citizen, May 25: OUR TOWN.—The county seat of Calaveras is noted, wherever the song of the minstrel has been heard, as being a "very fine place." Well does it deserve the appellation. Lovelier skies, more beautiful scenery, or purer air cannot be found in this fair State. California is the Italy of America, and San Andreas is the Paradise of California. Like a brilliant gem of great price our town glitters among the emerald colored hills which surround it. Here, gold is in the soil, health is in the atmosphere, content in every heart, and happiness beaming from every face. Here can be found the fig tree, and the vine, and the red wine wherewith to make yourself glad. We know but little concerning our patron saint, St. Andrew, but must say he was a lucky individual if he ever resided in, about or near this village. Stranger, to hear of, read of, or see San Andreas is much, very much, but to live here is unalloyed bliss.

A HAIRLESS CALF.—John Cook, of Winters Bar, Calaveras county, is the owner of a calf which is six weeks old and has not a hair on its body. Where is Barnum?

EL DORADO.

Republican, May 23: THE ditch seems to be a fixed fact this time, whether the long talked of sale is consummated or not. It is understood that the sale has been made, but that the parties purchasing have until the 5th of June to pay over the money. Should there be any failure, the South Fork Company will immediately commence operations, and at the earliest possible moment construct works capable of supplying to this neighborhood eight thousand inches of water. Should the sale be perfected the work would probably be done on a larger scale, but eight thousand inches is pretty good, and will be the means of building up the mountain regions hereabouts, beyond any comprehension of those not well posted on the situation.

FRESNO.

Expositor May 22: THERE is an excellent opening offered in Fresno county to that particular class of farmers known as vegetable gardeners. The railroad has placed this section in speedy communication with the great business centers of this State, and our unequalled climate and soil render the raising of vegetables and fruits, such as find ready sale, and command good prices, an easy matter, and at times when, in other portions of the State, they could not be grown without the assistance of hot-houses. Frosts are very slight and rare in this vicinity, and in consequence plants that in other sections must be destroyed early in the season, unless protected, continue to flourish throughout the Winter. This advantage must be apparent to every one, and we think will be properly appreciated ere long. This section is bound to be the vegetable garden for San Francisco, Stockton and Sacramento, before many years.

FINE CROPS.—The result of the present year's farming promises to be most gratifying to the farmers of Fresno county. We hear but little said about "crop failures." It is true that some who planted quite late will not be able to realize as handsomely as they desire, but the fault lies with them, so that no absolute failures on account of drouth or climatic causes can be chronicled. We are pleased to know that such gratifying results await our farmers.

NAPA.

Register, May 25: CROPS.—The grain hereabouts will be very light this season. Haying has commenced in earnest. Mr. McCrory of Walnut Grove informs me that his grapes have not been hurt by the frost, and that the yield will be fully as good as last year. In fact I do not know of a vineyard in this end of the valley that has been hurt.

SOME WHEAT.—Paris Kilburn brought over some specimens of wheat and barley, this week, from his San Joaquin ranch that makes the eyes of our farmers "bug out." The wheat stalks are full five feet eight inches long; and he says he has one field of 1,500 acres that stands almost thick enough for a man to walk on. The barley heads are from four to six inches in length and well filled.

NEVADA.

Republican, May 25: A train containing cattle and horses came through from Sacramento to-day. The animals are being taken through to the State of Nevada for pasturage during the Summer. Stock men find it cheaper and safer to transport cattle over the railroad than to drive them on foot. The saving in time, food, help, and loss of stock; more than pays the freight.

Efforts are being made to get up a fishing pic-nic along the Truckee. Sacramento, San Francisco, and other towns along the railroad are to be invited. One hundred pounds of fish spawn for bait has already been secured, and a cargo of fish hooks has been ordered from the East by one of our hardware firms.

PLACER.

Herald, May 25: ORANGES IN THE FOOT-HILLS.—M. Andrews, of the banking firm of Hubbard & Andrews here, presented us this week a branch of an orange tree bearing a fine ripe orange and numerous orange blossoms. The seed from which this orange grew was planted by Mr. Andrews, in his lot in Auburn, some twelve years ago. It took its chances with other out-door fruit trees, proved hardy, and last season bore a number of oranges that matured and ripened into splendid fruit during the last Winter. We have seen no more healthier or more perfect orange in the market than this one. The tree stands on a high exposed ridge, fully 1,200 feet above the Sacramento Valley, and for a dozen years has withstood whatever of winter or drouth we have here, and has now matured and ripened first quality of fruit in the worst of our winter weather. We confess some surprise and much gratification at this fact. It teaches us of these foot hills that we have not and do not know the varied productive capacities of the climate and soil we enjoy. The tree is now just in bloom, at a time when all possibility of frost is over, which teaches that orange culture here can be safely engaged in without danger from frosts. There are many young orange trees here and this one has taught their owners that they may soon look for fruit. We ask our farmers and orchardists to note this item, and profit by its teachings. It will not be many years till these beautiful hills and valleys, this most healthful, pleasant, seasonable and productive of all California's best sections will boast its orange and lemon groves side by side with

the almost universal fruit and vine productions of to-day.

SANTA BARBARA.

Signal, May 18. MAGNIFICENT GRAIN CROPS.—A ride from Saticoy down on the north side of the river, on Monday, revealed to our sight some of the finest grain fields we have ever seen in this or any other State. From Saticoy, beginning through that of W. D. F. Richards, G. W. with Rev. S. D. Wells' ranch, and passing Chrisman, the Messrs. Evans, Rev. S. Bristol and ending with Captain Mayhew's, a distance of some five miles, it is an unbroken sea of barley, wheat and oats, barley being the predominant crop. It is estimated that hundreds of acres of the barley, particularly that belonging to Mr. Everett, on the Christman place, will average one hundred bushels to the acre. Most of the wheat is also very fine, standing well, full, large-headed and free from rust. Corn and beans are also looking as fine as heart could wish, particularly on Mr. Bristol's place. In 1869 he made as high as 140 bushels of corn to the acre on the same ground. There seems to be but one short crop here this year, and that is flax. Some places look very fair, but most of the fields are nearly or quite a failure, owing, it is thought, to the unusual late cool weather and to the cutworm.

SANTA CRUZ.

Sentinel, May 25: HAYING.—Farmers and others are now cutting their hay crop. Owing to the wet season and late cold winds, the crop is very light this year—not more than half of what it was last year. The grain crop looks very well, and is far more promising.

SEA BATHING.—The bathing season, in the surf, has fairly commenced. On Wednesday last a number of ladies and children were rolling in the breakers enjoying the bath, notwithstanding the chilly atmosphere. They seemed to think the cooler the air the more genial the salt water. Strangers and visitors from a distance can be accommodated with new and latest style of bathing dresses. Ladies will find the Dolly Varden doucers just the thing to disport in the briny deep or to pitch in, and meet the waves, on the rise, as the edge-comb breaks over them in a refreshing spray. Another advantage is that regular baths can be had daily; if the open air baths are too cold they can have an indoor warm bath in comfortable, nice rooms, at their leisure.

SACRAMENTO.

Telegraph, May 25. BUTTER.—The dairymen in this vicinity are now making large quantities of excellent butter and for summer use it is put up in convenient sized kegs and cannot be surpassed by that made in any portion of the State, for flavor and for keeping. Now is the time to purchase butter, as it cannot be bought by the keg, fresh for less than thirty cents per pound of any of the dealers in Folsom, who are now purchasing large quantities and sending to various parts of the State. In a month or two butter will be worth sixty cents per pound.

WANTED.—A manufactory is greatly needed in this town, to fill the great demand for tanks, pipes, for the wine makers in this vicinity, and also for butter firkins. Any parties who will engage in the business here, may be certain of doing a very profitable business at once. A building for the purpose can be had at a small rent, and the business in every respect can be carried on successfully.

SAN BERNARDINO.

ARTIFICIAL FISH-POND.—One of the finest artesian wells in San Bernardino is that of A. Starke; it flows a very large stream of water which is far more than he could possibly utilize. This spring, one year ago, the idea suggested itself to the mind of Starke to take the water down into the far end of his garden and there build him an artificial pond in which to raise fish. He forthwith acted upon the suggestion, went to work and built the pond, soon had it finished and well stocked with trout and suckers, brought down from the mountain streams. The pond is now literally alive with fish; some of the trout are a foot in length. He also built him a sluice, some 50 or 60 yards long, in which he is now carefully and watchfully attending the young trout, from this spring's spawn, thousands of which now fill the sluice, and in a year or two will be sufficiently large for the table. Starke will, by next spring, not only be able to furnish his own table with fish, but will have a sufficiency to supply the town:

TRIMITY.

Journal, May 25: MORE GOATS.—Mr. J. F. Hoadley, of Lewiston, is going into the Angora goat business, and has purchased two bucks and two ewes of full blood, and

one hundred three-quarter grade ewes. Mr. Hoadley says that he has one of the best goat ranges in the State. Samples of Angora fleece exhibited to us by Mr. Hoadley were as much finer and glossier than silk as can be well imagined. We can't see how the business can fail to be profitable. The best Angora fleeces are worth \$1 25 per pound. The poorest that can be used will sell for fifty cents per pound. It is true that the fleece does not equal that from sheep in weight, but the price is much higher and goats are more hardy and less expensive. The goats will thrive where sheep will not, and the wethers make excellent mutton. From all we can gather, Trinity county is well adapted to the breeding of Angora goats, and that in almost unlimited numbers. Wine, wool and silk, together with mining, will make this a rich county yet.

TUOLUMNE.

Independent, May 25: PROLIFIC CROP.—We were shown, last week, a twenty-acre field of fine barley, growing on the farm of Mr. Wm. Johnson, Cold Spring Cottage Ranch, three miles below Sonora, on the Jamestown and Columbia road. The stalks were very tall, the heads of which were filled and averaged some six inches in length. The wheat crop on this place is also in a thrifty condition. He has also began cutting and making his hay, which is considered to be very heavy.

NO STARVATION.—The wheat crop growing around Sonora, is better this season than we remember it for several years past. In town, Thos. Leonard has four and-a-half acres of wheat now in blossom, the average height of which is 5 feet 4 inches and well headed. Several other of our ranches within a circuit of seven miles is equally good.

FALL WILD OATS.—Last Monday, on the ranch of Mr. C. Burden, of Shaw's Flat, we saw a crop of wild oats, which would average a height of six feet and a half, and it was not yet ripe. If left to grow, it would probably reach eight or nine feet.

LABORERS SCARCE.—Our ranchers are complaining that good reliable laborers, are hard to obtain this season, as the best are putting out to the mines where they obtain better wages. The Chinese don't suit, as they are not competent to manage agricultural machinery.

TULARE.

Delta, May 23: ALFAFA.—Mr. H. T. Huffaker has got a specimen of this grass, sown last February, which he thinks will be so far successful as to induce him to extend the field greatly another year. Mr. H. thinks the main thing in its cultivation is to prepare the ground well before sowing. The soil should be mellow and soft.

THE GRAPE CROP, as we learn by inquiry among farmers, is promising beyond expectation. The early settings, bitten by the frost, have fallen off and given place to others, with indications that the crop will be little if any less than last year, in this locality. There will be a limited yield of peaches in the range of the great frost, the apricots being a total failure.

YOLO.

Democrat, May 18: DAVISVILLE.—During a ride to Davisville from this place the other day, we had an opportunity of noting the growing grain. A majority of fields looked splendid, the wheat just heading out and apparently as thick as it can stand. Some few fields are lighter, but nearly all, we were told, would probably make a fair crop. Col. Jackson, late President of the Cal. P. R. R., has two or three thousand acres near Davisville, as fine as ever gladdened our eyes.

OREGON.

Farmer, May 18: THE WHEAT CROP. From private resources we learn that the wheat crop in all parts of the State promises well. In some places the fields look extraordinary fine, and in none is there a prospect of a decline on the yield of any preceding year. The very favorable season we are having and the large additional acreage sown to wheat this year, will give Oregon the largest yield of grain by nearly one-fourth that she has ever had.

HANDSOME WOOL.—Capt. John F. Miller has shown us samples of wool from the Leicester sheep brought from New Zealand to this State by Messrs. Cameron & Goodwyn. The samples were from lambs fifteen months old, were an average of the lot, and measured fifteen inches in length. The fleeces, forty-seven in all, averaged thirteen pounds each, and were bought by Willamette Woolen Manufacturing Company at 55 cents.

Sutter's Mill—Where Gold was First Discovered.

The accompanying illustration will call to the minds of pioneers of California, many pleasant reminiscences of those favored and long to-be-remembered days, the days of "49." It represents Sutter's mill, where the first practical discovery of gold was made, which led to the "excitement" of 1849 and the immense influx of people from all parts of the world to our shores, ultimately resulting in the opening of the gold fields of the Sierras, the civilization and settlement of our glorious State; the discovery of the unbounded field of mineral country on the Pacific Coast; and the development of the numberless resources of much-favored California, as well as adjacent States and Territories. Sutter's mill was situated on the South Fork of the American river, in El Dorado County, for a time known as the "Empire County" of the State. The story of the discovery of gold by James W. Marshall is briefly as follows:

Marshall was building a sawmill, under contract, for J. A. Sutter, at the locality above mentioned, and, on the 19th of January, 1848, turned the water into the race. The swift current of the race washed away considerable earthy matter, exposing numerous coarse particles of gold, one of which, when the water ran clear, was picked up by Marshall. He gave the piece to Mrs. Weimer, the wife of his partner, who was at the time cooking for the men, and, according to Samuel Brannan, Esq., in a recent letter to the *Calistoga Tribune*, it is still in her possession in Santa Barbara. Although Marshall was confident that he had discovered gold, he knew nothing of either chemistry or gold mining, so he could not prove the nature of the metal or tell how to obtain it in paying quantities. He went, however, every morning to look for more pieces, but the men with him having no faith in the value of his discovery, paid little attention to what he was doing. His specimens continued to accumulate, and about the middle of February, Mr. Bennett, one of the party at the mill, came down to San Francisco to learn whether the metal was really gold or not.

A man named Isaac Humphrey, who had washed gold in Georgia, immediately recognized it as the "pure stuff." He went back to Sutter's Mill (or Coloma) with Bennett, where they arrived on the 7th of March. A few of the men were indolently hunting for the gold, but without much faith as to its really being such, and work at the mill was going on as if there were none in the neighborhood. After Humphrey had washed a pan of dirt from the bottom of the mill race in the place where Marshall had found his specimens, he became convinced that the mines were far richer than any he had ever seen.

A rocker was made and the search began in earnest. The other men at the mill seeing his success and confidence in the discovery immediately quit work, made rockers for themselves and started to work hunting for gold, everything else being abandoned.

We give herewith an illustration of the mill from a painting by Chas. Nahl, belonging to Mr. A. Roman, of this city, which was taken from a sketch made in 1851. It

was located in a beautiful valley on the South Fork of the American River. At the time of discovery Coloma contained a double log cabin, and about eighteen persons, exclusive of Indians. From that time to the present the place has experienced the usual vicissitudes incident to a mining camp where the population is always changing.

The mill was, we believe, never completed, and the sketch shows it as it was left at that time. Among the persons who were there at the time of the discovery, were J. W. Marshall, E. Pierson, John Weimer, Peter Weimer, W. H. Scott, A. Stephens, H. Bigler and C. Bennett.

In the middle of March, P. B. Reading, visiting Sutter's Fort, heard of the gold, and on going to Coloma and seeing the similarity of the formation and that of his own ranch, near the head of the Sacramento Valley, started back, and in a few weeks was washing gold on the bars of Clear Creek, nearly 200 miles northwest from Coloma.

John Bidwell also came to Coloma, and, returning with a party of Indians from

concerned is twenty dollars per diem."

Immediately after this commenced the great "49 rush," with which most of our readers are acquainted.

There has been considerable discussion as to Marshall's claims to being the first discoverer of gold in California at Sutter's Mill, and a number of persons have presented themselves as candidates for the honor. Geo. M. Evans in a recent letter to the *Oregon Bulletin*, claims that he, Stearns and T. Sirrine were the discoverers, and Sam Brannan, Esq., was the first one who made the fact publicly known. The latter gentleman seeing the letter referred to, republished in the *Calistoga Tribune*, denies the statement by giving substantially the facts above mentioned to the effect that it was James W. Marshall, and says that there are many living witnesses to testify to their correctness. It is generally conceded that Marshall was the first practical discoverer of gold in California, although its existence in this country was known for some years before. The Indians had several times brought small quantities to the missions, but no steps were



SUTTER'S MILL—WHERE GOLD WAS FIRST DISCOVERED.

his ranch, began washing gold on the bars of Feather River, 75 miles from Coloma. Some of the men became dissatisfied because Marshall, Weimer, Bennett and Capt. Sutter claimed the right of discovery, and charged all who worked there 10 per cent., so they prospected for themselves, and found good diggings about 25 miles down the river, at a place which has since been known as Mormon Island. By this means the mines were immediately opened at several different points, proving, in a measure, their extent and value.

The first printed notice of the discovery of gold appeared in the *California Star*, which was published in San Francisco, on the 15th of March, 1858. It was as follows: "In the newly made race-way of the saw-mill recently erected by Captain Sutter, on the American Fork, gold has been found in considerable quantities. One person brought \$30 to New Helvetia, gathered there in a short time."

On the 29th of May the same paper announcing the suspension of its publication, said: "The whole country, from San Francisco to Los Angeles, and from the sea-shore to the base of the Sierra Nevada resound with the sordid cry of gold! gold! gold! while the field is left half planted, the house half built, and everything neglected but the manufacture of picks and shovels, and the means of transportation to the spot where one man obtained \$128 worth of the real stuff in one day's washing; and the average for all

ever taken to ascertain the localities or work the mines.

In Hakluyt's account of the visit of Sir Francis Drake to the California Coast, in 1579, the following statement occurs concerning its mineral wealth. "There is no part of the earth hereto betaken up wherein there is not a reasonable quantity of silver and gold." There is little reason to believe, however, that he verified this statement. But Alexander Forbes, in 1835 wrote, "no minerals of particular importance have yet been found in Upper California nor any ores of metals," and speaking of Hizar's emigrants who arrived in 1833, he said that "there were among them goldsmiths proceeding to a country where there was no gold." There are reports that silver was discovered in Alisal, Monterey Co., in 1802, and gold in San Isidro, San Diego Co., in 1822. In a collection of documents relative to the department of California by Manuel Castañares, a letter written by him to the Mexican Government in 1844, speaks of a deposit of gold discovered in the previous year about 45 miles from Los Angeles. He says that there were in circulation in Los Angeles about 2,000 ounces of gold taken from these deposits when he left for Mexico.

Prof. Dana, the geologist of Wilke's Exploring Expedition, says gold rocks and veins of quartz were observed by him in 1842 near the Umpqua river in Oregon, and pebbles from similar rocks along the shores of the Sacramento river, and when speaking of the localities of gold, says that it may be found in "California between the Sierra Nevada and the Sacramento and San Joaquin rivers."

The State Legislature have established

Marshall's claims as the first discoverer by giving him a pension and although the credit has been given by various persons to various others, even to "Indian Jim, a Digger Indian" it is likely that Marshall's name will go down to posterity as the man whose discovery resulted in the great "California excitement of 1849."

THE HORSEMAN.

The Thoroughbred Horse.

The *Dutchess Farmer* in an article on the thoroughbred horse, very tersely sums up his points of superiority as follows:

1. They are more intelligent, possessing more brain and nervous matter.
2. They are, from their intelligence, more tractable and kind in their disposition and temper.
3. They are less liable to disease from a superior organization.
4. They are more elegant in carriage and appearance.
5. They are superior in action.
6. They endure the vicissitudes of heat and cold better.
7. They live to a much greater age, maintaining their usefulness.

8. They are superior in fleetness, durability, bravery and breathing powers.

9. They always have and always will command higher prices in the market than any other breed.

If you will examine the thoroughbred you will, on investigation, find a superior animal organization—his bones are more solid, his tendons stronger and much better defined, his muscles more firm and elastic—in fact his form and quality are so much superior, it results that he is much more active, much more fleet and powerful than any other variety of the horse tribe. He will perform much more labor in a given time, and repeat the task oftener, coming round much quicker from over-work than any animal of an inferior blood. When the cold-blooded horse is over-

worked, his spirits sink, and his recovery is slow, and sometimes never complete. A square inch of bone from a thorough bred horse is much heavier than a square inch from a cart horse, resembling pumice stone, while the former is solid, partaking more of the close grained nature of ivory. The same remark will apply to the tendons and muscles. Consequently, a thoroughbred horse will be stronger than a cart horse in a little more than half the compass. It is asserted—and is doubtless true—that the thoroughbred horse can support a greater weight on his back than the common horse.

INDIGESTION IN HORSES.—Whenever the evil is noticed, the animal must have a piece of rock salt and chalk constantly placed in his rack and a little pipe clay, magnesia, or other ante-acid, in his water. If worms have been passed, give three drachms of aloes dissolved in two ounces of turpentine and a pint of gruel. Half an ounce each of ginger and gentian, and half a drachm of sulphate of iron; should subsequently be administered twice a day, to impart tone to the digestive organs. Turning the animal out to grass in the spring of the year, when it can be benefited by exercise and fresh air will be found to be very beneficial.—*Am. Stock Journal*.

A MERE STUMBLE.—When a horse stumbles never raise your voice—the creature dreads its master's chiding; never jag the reins—the mouth of the horse is far more sensitive than the human lips; never use the lash, the horse is so timid that the slightest correction overpowers its reasoning faculties. Speak to the creature; reassure the palpitating frame; seek to restore those perceptions which will form the best guard against any repetition of the faulty action.

USEFUL INFORMATION.

Carbolic Acid and Its Applications.

One can hardly pick up a paper now-adays without finding some reference to carbolic acid, a word which, until quite recently, it was difficult to get printed without having the *l* changed to an *n*. The valuable uses of this agent are making it very generally employed, and for the benefit of our readers we give (from the *Industrial Monthly*) some remarks concerning its character and applications.

The beautiful aniline colors, many favorite essences and perfumes, and the best disinfectant of modern times, carbolic acid, (called also phenol, phenyl alcohol, phenic acid and coal tar creosote,) are all prepared from coal tar.

Pure carbolic acid is a white crystalline substance having a powerful smoky odor. When exposed to the air it absorbs water and becomes liquid. It is soluble in water, alcohol, ether and glycerine, its combination with the last being one of the most valuable preparations of its class. A strong solution of carbolic acid attacks the skin of the lips, and even produces a disagreeable feeling where the skin is much thicker, so that great caution should be used in employing it as a wash.

It is as a disinfectant, however, that carbolic acid has proved most valuable, its power in this direction being undoubtedly due to its property of coagulating albumens. That it has the power to prevent contagion, was proved very clearly by Mr. Crookes, who found it a most complete destroyer of the infection of cattle plague. A Commission of the French Academy of Science reported that hyponitrous acid was the most efficacious of all disinfectants used in their experiments, but that carbolic acid was nearly as good, while it is far more easily applied and far less dangerous and expensive. While chlorine and the hypochlorites entirely failed to deodorize the gases from the bodies at the Paris Morgue during the heat of summer, carbolic acid proved perfectly efficacious. According to M. Devergie, water containing only the 1-4000th part by weight of carbolic acid completely disinfected the deadhouse in the hottest weather, even when it contains six or seven bodies.

There are various methods of applying carbolic acid, all founded upon its property of vaporizing in combination with water at ordinary temperatures. Thus, it may be mixed with water and sprinkled over the floor and walls of dwellings or stables. As, however, the solution produces disagreeable stains, and it is difficult to remove the odor afterwards, it is better to sprinkle the liquid over sawdust or sand contained in shallow pans which are placed in the apartments to be disinfected, or the liquid may be sprinkled over waste cloth hung up in the rooms. For washing animals or even the human body, carbolic acid soap is an excellent form in which to use the disinfectant, and it has even been applied in the preparation of wrapping paper used for the preservation of meat.

The odor of carbolic acid is very powerful, and, to some persons, exceedingly disagreeable. It may even be questioned, whether it is altogether healthy, since we know that in a concentrated condition it proves rapidly destructive to life. Some years ago, an attempt was made to substitute carbolic acid for carbonic oxide in the Gamgee process. No difficulty was found in slaughtering the animals, by exposing them to air slightly impregnated with carbolic acid. A bird, a dog and a sheep, were successively killed, and then an ox was tried. He became a little obstreperous, but finally succumbed. The question now arises, to what extent may air be impregnated with carbolic acid vapor, without being rendered unhealthy? In regard to this point, we know of no reliable experimental investigations. That in certain common cases, it is powerfully destructive of animal life, is well known, and consequently we find it extensively used for the remains of certain annoying parasites, which infect man and other animals. For the removal of fleas and other pests from dogs, cats, sheep, etc., a strong wash of carbolic acid soap is the best agent yet discovered.

WHAT SHALL A WORKMAN STUDY?—"In Lectures in a Workshop" in the *Industrial Monthly*, T. P. P. says: If there is any doubt about what study or studies should be followed with a view to self culture, we can remove it by a simple rule given in these words, namely: *Study your business*. By this the daily bread is to be earned; and it is highly probable that the knowledge of the trade engaged in exceeds the information on all subjects outside of it. Many men are continually attempting too much, and worry because they cannot swallow whole volumes of literature and science in a few months; they are apt to slight their daily occupation as an unavoidable means of maintenance and concentrate their efforts upon something quite foreign to their trade. Such men have mistaken their calling, and are wasting their time so far as self-improvement goes.

AN ACOUSTIC EXPERIMENT.—Let a wide glass tube, open at both ends, be taken, and in this a piece of fine wire gauze be pushed up some little distance. If the gauze be now heated to red hotness over an ordinary Bunsen burner, and then removed, it will shortly emit a shrill note, lasting from five to ten seconds. The experiment will be new to some of our readers, and has the merit of always going off.

To Prepare Skeleton Leaves.

Mr. J. F. Robinson describes in *Hardwick's Science Gossip* a simple method of preparing skeleton leaves, which seems preferable to the old and tedious method of maceration, and which he recommends to all young botanists, especially to his fair friends, who take up the science of botany more as an intelligent amusement than for severe study. First dissolve four ounces of common washing soda in a quart of boiling water, then add two ounces of slaked quicklime, and boil for about fifteen minutes. Allow the solution to cool; afterwards pour off all the clear liquor into a clean saucepan. When this liquor is at its boiling heat place the leaves carefully in the pan, and boil the whole together for an hour, adding from time to time enough water to make up for the loss by evaporation. The epidermis and parenchyma of some leaves will more readily separate than others. A good test is to try the leaves after they have been gently boiling for an hour, and if the cellular matter does not easily rub off betwixt the finger and thumb beneath cold water, boil them again for a short time. When the fleshy matter is found to be sufficiently softened, rub them separately but very gently beneath cold water until the perfect skeleton is exposed.

The skeletons, at first, are of a dirty white color; to make them of a pure white, and therefore more beautiful, all that is necessary is to bleach them in a weak solution of chloride of lime—a large teaspoonful of chloride of lime to a quart of water; if a few drops of vinegar is added to the solution it is all the better, for then the free chlorine is liberated. Do not allow them to remain too long in the bleaching liquor, or they will become too brittle, and cannot afterwards be handled without injury. About fifteen minutes will be sufficient to make them white and clean looking. Dry the specimens in white blotting paper, beneath a gentle pressure. Simple leaves are the best for young beginners to experiment on; the vine, poplar, beech and ivy leaves make excellent skeletons. Care must be exercised in the selection of leaves, as well as the period of the year and the state of the atmosphere when the specimens are collected; otherwise, failure will be the result. The best months to gather the specimens are July and August. Never collect specimens in damp weather, and none but perfectly matured leaves ought to be selected.

STRETCHING TRACING PAPER.—The thin transparent tracing paper, used by architects and draughtsmen, can be stretched or be mounted so as to give a fine even surface, on which water-coloring and shading can be done as easily as upon mounted paper. Cut a piece of drawing-paper the size of the drawing-board; gum the upper surface, edge of the board, about $\frac{1}{2}$ inch in width; spread the tracing-paper carefully over the drawing, and smooth down on the gummed edge; then turn the sheet back, and gum the remaining three edges of the board; bring over the tracing paper and smooth down the edges; do not pull or twist the sheet, so as to get it tight or severely strained, but get the edges well held down by the gum. After the gum has dried, a clean sponge, well saturated with water, may be passed over the entire surface, except on the gummed edges. The tracing-paper expands and blisters all over, but in a few minutes the dampness evaporates and a beautiful surface is presented, similar to a transparent slate. The tracing can now be colored or shaded as on drawing-paper, and any blots or errors can easily be washed out.—*Ex.*

EFFECT OF FOOD ON THE TASTE OF FISH.—Since the introduction of coal oil refineries along the Schuylkill and Delaware, the original fine flavor of the shad caught in these rivers has been materially injured, partaking of the rather unpalatable taste of kerosene. Seth Green, who is one of the best authorities on the fresh fish question in this country says "The flesh of fish will taste of kerosene if caught in any stream in which the refuse of kerosene oil refineries is allowed to run."

INDIA RUBBER LIQUID BLACKING.—Take of ivory black, sixty pounds; molasses, forty-five pounds; gum arabic, dissolved in a sufficient quantity of hot water, one pound; India rubber, dissolved by the aid of heat in nine pounds of rape seed oil, eighteen ounces; mix them well together. This blacking may be applied by means of a small sponge, attached to a piece of twisted wire, like the well-known Japa blacking.—*Scientific American*.

CAUTION.—Wherever iron pipes are employed for conveying any heated medium, such as smoke, hot air, steam, or hot water, they should not be allowed to pass through wood-work unless protected by an earthen crock. The iron rust may be reoxidized by heat, and upon reoxidizing it often becomes red hot. Many fires have occurred from this cause.

COAL MINES.—The *Mercurio*, a paper published in Chile, reports important discoveries of coal along the gulf of Arauco, particularly on both banks of the Carampangue River, near its mouth, where they intend working the mines. The coal is of passable quality and said to be found in abundance.

In making the railroad grade across the island near Rock Island, it is said geological evidences were found indicating that the Mississippi once covered it with a depth of fifty feet of water.

GOOD HEALTH.

Physiological Effects of Coffee.

An interesting communication was recently made at a meeting of the Academy of Sciences in Paris in regard to the value of coffee as an article of food. Attention was called to a statement of Mr. Gasparin, in 1850, that the miners of Charleroi preserved their health and great vigor of muscular force, by the use of less than half of the nutriment indicated as necessary by theory and daily observation. Using food containing less nitrogen and carbon than the daily ration of the monks of La Trappe, whose countenances are pale, and who exercise scarcely one-fifth as much as an ordinary workman, these Belgian miners were more industrious and energetic in their labors. The secret of the difference was stated by Mr. Gasparin to consist in the use every day by these miners of a pint of an infusion of about an ounce of coffee, prepared in two quarts of water, which served the purpose of counteracting the injurious effect of an insufficient supply of food.

Reference was also made to an experiment in 1860, by Mr. Jousand, in which, by the use of a decoction of about an ounce and a half of powdered coffee, a young man was kept, with no other food whatever in good health and strength for seven days, during which time he took more active muscular exercise than usual, without any special inconvenience.

The particular deduction from these experiments appears to be that coffee has an important action in preventing denutrition and emaciation. An illustration of this is seen, according to the author, in the effect upon the urea. In one experiment, about half a grain of caffeine was consumed daily, and the amount of urea was diminished 28 per cent.; while an infusion of about two ounces of roast coffee diminished it by 20 per cent. This is asserted to be the result by very careful experiments of a physiologist upon himself, proving that caffeine and roast coffee diminish the oxidation of the system, and temper the process of denutrition. The excessive frequency and intensity of the beating of the heart was also found to be reduced in several instances. It is probable, according to the author, that a similar action is exerted by some other substances—the Paraguay tea, especially, which, it is well known, enables the natives of the Andes to subsist for a long time on an incredibly small amount of food.—*Harper's Monthly*.

PATENT GAS COMPANY.—The *Money Market Review*, of London, April 20th, contains a notice of a new invention which promises to open a new era in gas manufacture, and of which an eminent gas engineer says:

"This process must sooner or later be adopted by all existing companies." The inventor claims as its chief advantages, as compared with the gas supplied by existing companies, that it has but six grains maximum of sulphur impurities per 100 cubic feet, and gives 11,500 cubic feet of 20 candle gas per ton of coal, in lieu of 9,500 cubic feet of 14 candle, as given by the ordinary process. In other words an illuminating power of 46,000 standard sperm candles instead of 26,000, being a net gain of light equivalent to 72½ per cent. The cost of production by the patent process being sixteen pence per 1,000 cubic feet as compared with twenty-one pence, the cost of the ordinary process.

A MOUSE AFFLICTED WITH SMALL-POX.—The *New York Standard* of May 6th, is responsible for the following:—On Friday evening a lady entered the drug store of Dr. Edward Ludridge, on Hudson avenue, near Sands street, Brooklyn, and placed a live mouse on the counter. The little animal had a very sore head, and the doctor was asked whether he knew what the matter was. He was also informed that it had been brought from the tenement house, 156 Hudson avenue, near York street, where there have been several cases of small-pox. After examining the mouse he found that it was covered with sores. He sprinkled some disinfecting powder over it and in a short time it died. It was then dissected, and a clear case of small-pox in its worst form was revealed. The remains were inclosed in a glass jar, and are to be sent to the hospital for further examination, as it is believed to be the first case of the kind ever heard of.

EDITORS PRESS:—Some time since I read in your columns, of a cure for "dandruff" which consisted simply in wetting the hair with water in which sulphur had been steeped. Being troubled with dandruff, and thinking the experiment at least harmless, I tried it, and it succeeded perfectly—there is now no dandruff on the scalp. The water has acquired a slightly acid taste, but I have not the time to ascertain exactly what change has taken place. The fact, however, may be useful to some of your readers.—E. H. A.

TOMATO CUSTARD.—This is said to be beneficial diet for consumptives. It is made by straining finely stewed tomatoes through a course sieve, and adding two pints of milk and one pint of tomatoes, for four eggs and one teaspoonful of sugar. Bake in small cups quickly.

Care of the Eyes.

There comes a time when normal eyes find their powers grown limited, and require more light, or assistance from glasses, when looking at small or near objects. When this period arrives, it is an error to persist in endeavoring to do as formerly with the eyes; but much use must be avoided, except in a clear light, or with the required auxiliaries. It is also a mistake to suppose that glasses should not be worn while it is possible to avoid doing so. On the contrary, they serve to prevent straining of the eyes, and preserve rather than injure vision.

Certain defects of refractive power are due to malformation of the eye, either existing from birth or acquired afterward, and are not to be removed by remedies or manipulations. It is a mischievous error to suppose that the form of an elastic globe, filled with fluid or semi-fluid substances, can be changed except for a moment, by pressing upon it with the fingers, as has been recommended by charlatans. All the theories that the eye can have its form favorably modified by rubbing it always in one direction, or by any other manipulation, have no foundation in facts. But while persistent squeezing, according to these methods, can never do any permanent good, it involves great risks. It may lead to congestion and hemorrhage within the eyes; or give rise to destructive inflammation, or formation of cataract, by dislocating the crystalline lens; or cause almost immediate loss of sight, by the separation of the retina from its neighboring parts; or increase the giving way of the back part of the globe, which is already often begun in near-sighted eyes.

The same warnings will apply with equal force against the use of eye-cups fitted with rubber bulbs, to alter the form of the eyeball, as is asserted, by suction. Valueless and dangerous as they are, persons are often persuaded to purchase and try them—sometimes to their sorrow.—*Atlantic Monthly*.

A NOVEL THEORY.—A German physician has lately started the theory that the fearful disease known as small-pox originates from an excess of albuminous matter in the blood, and that this is to be prevented by the administration of common salt. The habits of children in indulging too freely in sweetmeats he considers one great cause of this undue development of albumen, and coffee and tea if highly sugared, tend also to excite it in adults. An organic acid, such as lemon juice, he considers the best means of freeing the blood, when clogged with too much albumen, and he alleges that by taking these simple remedies in the way of precaution, he has, for upwards of twelve years past, frequented or taken up his abode in the most pestilential small-pox hospitals of Europe and South America with entire impunity.

A VICTIM OF HAIR DYE.—Thomas Minshall, a young man residing in Chester, Pa., was terribly poisoned a week or two since by a species of hair dye in common use among barbers everywhere. While coloring his mustache the barber suffered a drop to fall upon his lower lip, which was slightly chapped. In a short time after the part began to swell, became inflamed to an enormous size, and his face presented a shocking appearance. Convulsion after convulsion followed, and for some days his life was in great jeopardy. Within the last day or two, however, the swelling has somewhat subsided and he is in a fair way to recover.—*Yreka Journal*.

WET CLOTHES.—Few persons understand fully the reason why wet clothes exert such a chilling influence. It is simply this: Water, when it evaporates, carries off an enormous amount of heat, in what is called the latent form. One pound of water in vapor contains as much heat as nine or ten pounds of liquid water, and all this heat must, of course, be taken from the body. If our clothes are moistened with three pounds of water, that is, if, by wetting, they are rendered three pounds heavier, these three pounds will, in drying, carry off as much heat as would raise three gallons of ice-cold water to the boiling point. No wonder that damp clothes chill us.

SOUP FOR INVALIDS.—To a pint of warm water add three tablespoonfuls of cod liver oil, shake them until they are thoroughly incorporated. Take a clove of garlic, that has been steeped for some twenty-four hours in senna tea, and shred it into the liquid. Season with rhubarb and magnesia. Some add forcemeat balls of the same size—and of the same materials—as anti-bilious pills. Brown with a salamander, and serve up.

SCARLATINA.—Mr. W. M. Searcy suggests the frequent examination of the tonsils of all persons living in a house where scarlatina is present, as the redness and enlargement of these organs are premonitory symptoms of the disease. Nitrate of silver in solution—one dram to one ounce distilled water—is a good local application, and if the case be severe, aperient medicine is used in conjunction therewith.

TO REMOVE WARTS.—Apply to the wart with the end of a kuiting needle a little fuming nitric acid, to be had of the apothecaries. Repeat the application once or twice, and in two or three days the excrescence will come off without leaving any mark.



PUBLISHED BY

DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)OFFICE, No. 338 Montgomery street, S. E. corner of
California street, where friends and patrons are invited
to our SCIENTIFIC PRESS, Patent Agency, Engraving and
Printing establishment.

SUBSCRIPTION AND ADVERTISING RATES.

Subscriptions payable in advance.—For one year \$4;
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SAN FRANCISCO:

Saturday, June 1, 1872.

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COTTON.—Including a number of small fields,
about one thousand acres will be devoted to
cotton in the Merced valley this year. The ex-
periments of the present year ought to show
pretty conclusively whether cotton can be made
a paying crop in California. We have had the
profits of this culture demonstrated very hand-
somerly on paper. Now for a demonstration on
land.

The California Cotton Growers' and Mann-
ufacturers' Association have already planted 200
acres, and are to put in 150 more.

SAN LUIS OBISPO COUNTY.—From M. A. Ben-
rimo of San Luis Obispo, we learn that a larger
hay crop has been cut than for the last three
years; with every prospect of fifty per cent.
more grain than ever before. The hay crop is
gathered and the grain harvest commenced a
week ago.

CHERRIES.—There seems to be an abundance
of this excellent fruit at all the fruit-stands in
the city, but the prices are still high, varying
from 25 to 75 cents per pound. The Black
Tartarian takes the lead for size and quality.

CASH VS. CREDIT.—A merchant who does
a cash business to the amount of \$500 per
annum is doing better than he who sells
on credit \$5,000 at the risk of losing one-
quarter the amount by bad debts.

ON FILE.—The Manufacture of Tea. Cost
of Growing Wheat. The Poor Man's Rights.
Right Help to Silk-Growers.

APRICOTS.—This fine early fruit is coming in
freely and commands 25 cents a pound retail.

Californian Wines.

Many of our largest vine-growers and wine-
makers are now in the Atlantic States, making
or looking for a market for their wines.

We are informed that the principal objection
Eastern dealers and consumers set up to our
wines is, that they are too heady—too strong in
alcohol. This is a fact—a stubborn fact—and
one that works against the general introduction
and use of our wines East, more than any or all
others combined. It is this fact that more than
all others keeps our native wines from one's
dinner tables here, and prevents them from be-
coming the general and healthful beverage of
our people as the French and German wines are
among the people in those countries. The
sooner this fact is generally understood among
our wine-makers, and the remedy applied, the
better for them and the better for the industry
itself. While our wines contain all the way
from fifteen to twenty per cent. of alcohol, the
cheap and popular French and German wines
contain only from seven to ten per cent. The
German Rhenish, the most popular wine among
all the real and constant wine drinkers of the
Atlantic States, contains only seven per cent. of
alcohol.

This Rhenish wine is shipped direct from
Germany to St. Louis, Cincinnati, Chicago and
other Eastern cities, in large quantities—one
house in St. Louis the last year having import-
ed 80,000 gallons, to supply the demand cre-
ated by our foreign population. This style of
wine can be drunk without bringing on the
headache—without intoxication. This wine is
conducive to health, and taking the place of
ardent spirits conduces to habits of temperance.

Would we find a market for our California
wines in the East or at home, we have to re-
duce their percentage of alcohol. Would we
make them a popular, a health-giving drink, a
temperance beverage, we must learn in making
them, to cater more to the tastes and demands
of our consumers.

Sugar in the Grape.

It is true that our California grapes contain
much more sugar and less water than French
or German grapes, and consequently produce
more alcohol. In this fact seems to lie the dif-
ficulty which our wine-makers have to over-
come. It will not do to add water to the wine,
for this is adulteration and it ruins the wine.
It gives it a flat and raw taste. Some have
suggested heating to carry off the alcohol—but
this will not answer the purpose, for the same
degree of heat that will carry off the alcohol will
also carry off the bouquet, its life, in fact, to
make it wine at all. It has been suggested by
others, and we understand is now successfully
practiced by some of our most successful and
popular wine-makers, that the water may be
added immediately as the grapes are crushed,
and the desired result secured, while at the
same time the quantity of wine is very much in-
creased.

It is said that the water being added at this
time in the proper quantity, to reduce the per-
centage of alcohol to the desired amount, goes
through all the processes of fermentation, clar-
ification, etc., and thus becomes as much a part
of the wine as when produced in the proper
quantities in the grape itself, as in Germany or
France. If this be the case, and we see no rea-
son why it is not, the superabundance of sugar
in our California grapes, is a high recommenda-
tion rather than a disadvantage, as it has been
considered. We throw out these hints and
hope our wine growers' associations will not
only discuss but put them to a practical test,
not only for the reputation of the California
wines, but as well as for the interest of the
cause of temperance.

Wind-Broken Horses.

The best recognized treatment for wind-
broken horses is fifteen grains of arsenic daily;
at the end of a fortnight the symptoms are gen-
erally completely removed. They should be
carefully dieted and not put to fast work. The
food should be in small compass, consisting
chiefly of cut wheat-straw, with a liberal addi-
tion of oats and ground beans may be added, if
the animal is not very young. Water should
never be given within an hour of going out of
the stable.

Carrots are peculiarly suited to this disease,
and a diet of bran mixed with carrots sliced,
has been known to relieve a broken-winded
horse most materially.

REMARKABLE ESCAPE.—Anita Maria Dewey, a
child under three years of age, fell over fifteen
feet from a second story window, without in-
jury, in Oakland, on Saturday last.

Budding the Rose.

A correspondent over the signature of Chena
desires information about budding roses, and
the proper time to do it. We present a cut
which will illustrate the mode of doing it, so
far as forming the two parts that are to make
the points of union of the bud with the stalk.

The soft, pithy nature of most rose wood
stems or stalks, and the fact that the bark sel-
dom peels freely, prevents their being budded
with the same facility and manner as fruit
trees; hence the method as here given, which,
however, is easily performed and generally suc-
cessful.

With a thin, narrow blade scoop out a bud
down to the pith; an inch in length is enough,
with the bud in the center; smooth off any ir-
regularities of surface; make a corresponding
scoop in the stalk, just deep enough that the
edges of the bark may match when brought to-
gether.

Make a short slit in each, raising the points
of both a little, and insert the bud-wood; or
the two slits can be dispensed with, and whilst
the bud is held in place, tie or wind with a nar-
row strip of waxed cloth, above and below the bud, and
let it remain for six or eight
days; then cut off the stalk
down to within two or three
buds of the one inserted, and
in a week more all the buds
near the end, with the new
one, will make a start. After
they have attained a half inch
of growth, remove all but the
inserted bud.

Budding can be done at
any time in the year that good
mature buds can be had, and
the stalk to be budded upon
is in vigorous growth. The
same correspondent asks how
to grow Pansy or heart's-ense.

Sow in good fine mold at any time, but early
spring is best to obtain early summer flowers.
Barely cover the seeds, or to a depth of not
more than a quarter of an inch; keep moist but
not wet. If plants come into bloom in the heat
of summer, the flowers will be small at first;
but as the weather becomes cooler, they will
increase in size and beauty. To give good
flowers the plants must be vigorous and make
a rapid growth.

"It Brings out the Genius."

We met an old farmer friend of ours from
Yolo county, the other day, one who with us
had been engaged in the silk business a few
years back, and who is at present turning his
attention to the production of early cantaloups.
Knowing his native skill and ingenuity, we in-
quired after his farming operations generally,
and particularly as to how he was succeeding
with his melons this year. Said he, "they are
doing finely." "Are they in blossom?" in-
quired we. "In blossom! They are running,
and already have melons as large as hen's
eggs." "This has been a hard season," sug-
gested we, "how did you manage them?" "I
nursed them," said he. "I fed them as care-
fully as you would feed young silkworms. I
gave them tender food, and just as much as they
required and no more, and just at the time
they needed it." "But," said we, "how do
you feed melons?" "Why," said he, "I
planted them in small tins prepared for the
purpose, so that I could transplant them,
each hill with the earth contained in one tin,
without disturbing them in the least." Not
in a hot-bed but in a sheltered and warm place,
and often they were all transplanted in the field,
cold weather came on, the north winds dried
up the surface of the soil, and there was the
critical time—then like the worms they slept,
and then skill was in demand to keep them
alive and make them up without danger.

"Why," said he, "I was on my hands and knees
for a week almost, night and day—I dare not
give them cold water for I knew it would kill
them; they would drink too much, they would
take the chills and turn yellow and die. So I
fed them a very little mixed with the soil and
warmed or tempered by the sun. I pulled away
the dry surface soil with my hands and replaced
it with pulverized damp soil. I had two thou-
sand little boxes made for such occasions. One
of these I placed on the north side of each hill
in the daytime and covered the hills with them
in the night.

And so I repeated the operation each cold term

of weather, and the result is they came through
all in a healthy condition and I think I am now
all right."

"Well," said we, "you seem to think that
to be a successful farmer some skill is re-
quired." "Yes," said he, "to succeed well in
farming in California you want to watch things
closely. You want to read nature closely, and
follow it strictly. And if you would get ahead
of your neighbors you must help nature by art.
I tell you, "it brings out the genius."

Increasing the Vigor of Growth in Plants.

A very important announcement has lately
been made in France as to the effect produced
upon the luxuriance of vegetation by the dis-
turbance of the natural position of the branches.
It has been known for some time that if two
branches of a fruit-tree be selected of about the
same size, and the same upward inclination to
the horizontal plane, and one of these be bent
downward toward this plane, it appears to lose
its vigor, while the other gains in a like ratio.
It is now announced as the discovery of an ig-
norant peasant on the Dauube, named Hooi-
brenk, that this law holds good only up to the
horizontal position; and that if the branch is
depressed still further, and below the horizon-
tal, it becomes characterized by much greater
vigor than before, and, in fact, will put out
leaves and branches to an astonishing and un-
heard-of degree. But this depends upon keep-
ing the branches as nearly as possible in a
straight line, the effect being measurably lost
with a considerable curvature. In this case,
only the buds which occupy the top of the are
are developed completely, at the expenso of the
rest, which remain in their original condition,
contributing neither to the extension of foliage
nor of fruit.

Duchene Toureace, in communicating these
facts to *Les Mondes* attempts to show the causes
which seem to determine so great a flow of
sap to the branches inclined below the horizon-
tal line, and thinks that the explanation is to
be found in the establishment of a siphon ar-
rangement, by means of which the juice is
carried over the bend from the main stem in
excessive flow. Be this as it may, the fact re-
mains, as illustrated by an experiment prose-
cuted by this gentleman. In early spring,
when the sap was running in the vines, he took
four plants of about the same size, and trimmed
them so as to leave one stem to each, these be-
ing arranged vertically, obliquely upward; hori-
zontally and obliquely downward. He then
cut off the stems, and collected and measur-
ed what exuded, and found the amount
from the branch inclined downward was
more than three times greater than that
from the others.

Tobacco Culture.

We have received a communication from our
agricultural friend, W. P., of San José, in re-
gard to his attempts at tobacco culture. It
would appear from this and a former letter,
that he has not been as successful as he could
wish in starting his tobacco plants; whilst oth-
ers have had little or no difficulty whatever.
We find by looking over a work on tobacco
culture published by O. Judd, that out of
fourteen experienced cultivators of tobacco in
the Atlantic States, not one of them recom-
mends the sowing of the seed bed sooner than
March, and most of them name April; whilst
none of them name December, the time chosen
by our correspondent to sow his seed.

The best tobacco is grown in the summer
time, and the best plants are those that have
been the least time in arriving at the proper
size to be transplanted from the seed bed to
the open field. Seeds planted in March and
April grow with more vigor and produce better
plants than those sown earlier; we speak of
this as California experience; and yet there are
doubtless some localities where it would be
better to sow earlier than this.

We hardly feel that we should be doing our-
selves or our patrons justice, in offering "lib-
eral premiums" for essays on tobacco culture
in California, until some one can show us that
he has been uniformly successful in its culture
here, for at least three years consecutively. To
give one's Eastern experience, would be no
more than we could obtain from the works al-
luded to.

Agricultural Implements.

Nearly every freight train from the East brings several car loads of reapers, threshers and mowers. The demand for labor-saving harvesting machinery in the great valleys of the State must be immense. The machinery comes from manufacturing in the State of New York, Pennsylvania, Michigan, Ohio, Illinois and Wisconsin.

The above which we clip from the *Truckee Republican*, makes an excellent text, for talking upon the great want of agricultural machinery generally, throughout the Pacific coast. We want the machines and must have them; but the question is, have we the necessary woods, so far as wood is required for their construction, of the proper quality and durability for such machines, so that our own mechanics can be the manufacturers? Our coast is rich in mines of the precious metals, rich in broad mountain plateaus and elevated valleys, as the grazing grounds of domestic herds, still richer in the yet unoccupied acres of plain and lower valley, awaiting only improvement, rich in vast forests of pine and redwood; yet are we almost wholly destitute of hard timber.

We have many beautiful woods for the use of the cabinet maker, but when we want a wagon axle or even an axe-helve we must send to the Atlantic States for it. To grow timber to meet the wants of the present generation is simply impossible; we must therefore send abroad for the timber or import our machines ready made. We have inventive genius, and have given to the world some of the most valuable improvements known, of agricultural machinery; we have manufactured many excellent machines in San Francisco, taken them to the country only to fall in pieces under the influence of the desiccating, hot winds of the interior valleys.

It is the same with house furniture as with farming implements of wood, unless made and put together in the dry arid climate of the interior, will assuredly fall in pieces when carried there. And the same holds good in regard to wagons and other wood-work made in the Atlantic States and shipped here; they will not hold like wood-work put together in Marysville, Sacramento or Stockton.

What we must do for the present is, to import the hard woods from abroad, the Eastern States, or from the Amoor river or anywhere else, and then have them dried and worked up into necessary forms, anywhere in the heated interior; in this way we may hope to obtain our full money value in machines constructed of wood.

Seedling Fruits.

There are some kind of fruit trees, as the peach, that seem more inclined to reproduce from seed, varieties that equal the parent tree, than do apples or pears; thus we find almost an infinite variety of excellent seedling peaches, and many new varieties are originated every year, many of them equal to, and a few superior to the originals, and quite a number have already been produced in our own State.

Not so with apples and pears, for there are very few indeed of new California varieties that can take rank as a fruit of any more than ordinary excellence. And yet, in a country where all the introduced fruits are grown of superior size and excellence, there seems no good reason why we may not originate our share of the world's varieties of choice fruits.

Let the amateur experimenter but devote his attention to the subject in a manner likely, from the experience of the past, to produce the desired results, and we doubt not but new varieties equal to any the world ever saw would be produced, and fully equal to his highest hopes.

Shelter for Orchards.

If your garden and orchard grounds are so situated as to be exposed to violent winds, and particularly if cold winds, such as break through the passes of the Coast Range from the ocean, during the greater part of the summer, a hedge and timber shelter should be started even before the orchard is set out.

By so doing and using trees of rapid growth, as the willow, Lombardy poplar and yellow locust, or indeed any trees of rapid growth that can be made to thrive in the locality desired, and let the planting be done with a prodigal hand, and attention given to after culture and preservation from animals, a shelter can be grown, that will not only add greatly to the symmetry of your orchard trees, but also greatly promote their fruitfulness.

Inquiry About Cherries.

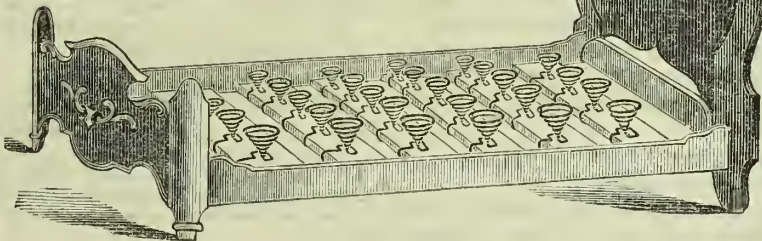
EDITORS RURAL.—In your issue of May 25th, I saw an article on the raising of cherries, and also noticed in your Retail Market rates, that cherries were worth from 25 cents to 50 cents a pound. I was surprised to find them quoted so high, after having been on the market nearly three weeks. Being in San Francisco on Monday last, I thought I would just inquire the price, to see if your reporter had put them up rather steep; when to my surprise I found them selling all the way from 25 cents to \$1.25 cents a pound.

Now, Mr. Editor, I am sure there is money to be made in growing cherries, and I am going to give them a fair trial, I shall procure the seeds immediately; any advice you can give me on the best way to carry out my plans of growing cherries in large quantities, would be thankfully received. A subscriber to the RURAL.

L. HAVERLY.

If our correspondent has climate and soil which he deems suitable for the cherry, and there are no cherries growing in the immediate vicinity, we would suggest that he procure a few two-year old trees, including some half-dozen varieties, of some reliable nursery-man; transplant with care, and then giving good culture and training to the trees, determine the suitability of both soil and climate to their growth. We make this suggestion, because it is already well known to fruit growers, that very many localities in California have proven entirely unsuited to the cherry, not so much to their growth as trees, as to their fruitfulness.

With trees two years old, three years more



WARNER & SILSBY'S IMPROVED BED SPRING.

would determine as to their fruitfulness in the locality chosen. In the meantime a fine nursery of seedlings might be started and grafted with the best sorts, ready for orchard setting, if the test of the older trees would seem to warrant it. But if not, then dispose of the trees to be propagated in a more congenial locality. Better do this, than set out an extensive orchard to be disappointed with it, after years of care and cost.

Something New.

Walnut stumps are becoming valuable as articles of merchandise at the East. Some one has discovered that the curly grain of the roots can be used for veneering purposes with great success, and the result is that they are in demand, and are worth \$150 per stump.

Some of the backwoodsmen of the forests of Iowa, Minnesota and Wisconsin are getting out the stumps rapidly, and creating a new and valuable trade. The veneering made from these roots is said to be most beautiful, and can be used in the finest work, and are particularly adapted to use in the manufacture of musical instruments.

Every day brings forth its news, and records the fact that we are a rapidly progressing and inventive people.

The Thresher's Guide.

This new work, about to be issued from the press of Dewey & Co., for the author, D. W. Holliman, is replete with useful and practical information to all persons interested in the threshing of grain. Giving full and concise directions for the setting up and management of all kinds of threshing machines and the powers by which they are driven. It should be in the hands of every one intending to take part in the grand threshing campaign of the season, for perusal; as it will be likely to save to the grain-producers of this coast alone, thousands of dollars annually.

A Self-Fastening Bed Spring.

We give annexed an illustration of a new device for securing bed springs. As will be seen by the single spring herewith shown, the bottom of which is so constructed as to clasp the slat and hold itself firmly in position, each spring is thus self-fastening, and can be applied directly to the slats of the bedstead without making holes or any other preparation, and being all complete in itself, needs not the attachment of any wood, iron or leather work to fasten it to the bedstead or to connect it to the other springs. Moreover, when any one spring gives out it can be readily displaced and a new one substituted.

They are claimed to be superior to any other, because they are simpler, more elastic, do not squeak, (as most slat bed springs do,) have no cracks or holes in which the vermin can hide, and have no strings to break or leathers to pull out. They are equal to the best upholstered spring beds, as they are exactly like them in the principle of action, being a spiral spring, (which is acknowledged to be the most elastic and strongest spring known,) and superior to them, in as much as they are not covered with cloth, which collects dust and vermin, are much easier to handle, and cost only about one-half as much.

These springs can be applied to any ordinary slat bedstead. Their number can be increased or diminished at any time. From three to five dozen make a set, and a set can be packed in a

space of one foot square, and can be attached to the slats by any person, so that no upholsterer is required for such work. The attention of furniture dealers, hotel keepers and others is called to this new device, as one especially worthy of their attention. They may be seen at 642 Mission street.

Rabbit Trade of Belgium.

It is almost incredible to what a degree of importance this branch of industry has attained in Flanders within the last few years. There are over fifty thousand skinned carcasses of these animals exported weekly to England during the summer season—or more than two and a half million annually—where they find a ready market as articles of food; while it is difficult to sell them in Flanders at half the price they bring in the English market. The preparation and coloring of the skins gives employment in Ghent alone, to more than two thousand workmen.

HARVESTING.—A gentleman from San Joaquin Valley informs us that the farmers are rapidly pushing forward their harvest. By the 15th of June, John McPike, formerly of Napa, will have 10,000 sacks of barley ready for shipment. The opposition steamer *Caroline*, which does the freighting for farmers on the west bank of the San Joaquin—the railroad tapping the east side—carried up from this city 40,000 grain sacks on Tuesday last and has a cargo of sacks engaged for next trip. During the season the steamer has carried up nine steam threshing machines and forty headers. The San Joaquin Canal Company are irrigating over 3,000 acres of land this year, 2,000 of which belong to Miller & Lux, of this city.

THE HORSE.—S. Pelton is furnishing us weekly with original papers on the diseases of the horse and appropriate remedies, which will be read with interest by owners of horses.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING MAY 14TH, 1872.

TRADE-MARK.—TEAS.—Castle Brothers, San Francisco, Cal.

GASKET-PACKING.—George W. Coffee, San Francisco, Cal.; assignor to himself and John W. Tucker, same place.

APPARATUS FOR AGEING WINES AND LIQUORS.—Adolphe Luquet and Prosper Huerne, San Francisco, Cal.

BEE HIVE.—Peter Ole Petersen, Oakland, Cal.

ORE-WASHER.—William T. Rickard, Monitor, Cal.

MAGNETIC INDICATOR FOR TEACHING, ETC.—Jacob Unna, San Francisco, Cal.; assignor to A. Roman & Co., same place.

CANDLESTICK.—Joseph Williams, San Mateo, Cal.

LUBRICATOR.—William T. Garratt, San Francisco, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Something About Wool.

The San Joaquin Valley *Argus* complains of the want of discrimination exhibited by purchasers of wool, and says: "The great desideratum seems to be quantity—quality being of comparatively little or no importance. An apt illustration of this point was furnished last year in the case above referred to. The party in question had 2,300 yearlings, the fleece from which was considered next to worthless, being short and exceedingly foul—the owner estimating at least one pound of dirt to every five pounds of wool. It was baled separately, and with many misgivings as to the result forwarded to market, a full statement of the case being made to the commission merchant to whom it was consigned. It was sold at 29½ cents per pound, while the fleece from the older sheep, which was long and silky, and almost entirely free from dirt—with which extra care had been exercised in shearing, baling, etc.—brought in the same market 31½ cents—a difference of only two cents per pound in favor of the finer quality. This being the case, what encouragement is there for the wool-grower to improve the grade of his sheep, or to exercise more than ordinary diligence in the preparation of his wool for market? Cotswold and South-downs to the dogs—give us scrubs! The more dirt the more money, seems to be the rule; and as the benefits of any system are to be judged by the practical results, we conclude that all efforts to improve the grade of sheep by crossing stock, etc., must necessarily prove futile, and the time spent therein worst than wasted. Money is what the producer is after—the largest return for a given amount of labor. Let him, therefore, cease his efforts at improvement, and turn his attention to scrubs and dirt. The latter will pay—the former won't—and that's 'what you know about wool.'"

California Butter vs. Eastern Butter.

From the tone of the Eastern Press we find that California is in a fair way of securing better prices for butter than Eastern States do for their own production. A reliable exchange says:

"The highest color is all that is sought for by both the local and shipping trade, and prices for such are consequently well sustained, selling at 30@31c., whereas the other grades mentioned are difficult to dispose of at prices varying from 20@26c. There is some increase in the receipts of Ohio, with a slight improvement in quality, but the greater portion of it is yet very poor stuff indeed, and despite the very best efforts of receivers to clear their houses of it, it is too inferior for the market men, and there is no other trade to carry it off. The reports from New Orleans are not flattering for extreme prices for butter this season, and shippers, except on orders, are buying but sparingly. The result of this will be a gradual weakening of prices, not so much, however, as to deter the Western Reserve from forwarding what is needed."

The ear load of California butter shipped to the East a few days since, is receiving marked compliments from the Atlantic papers; they pronounce upon it in Boston "as perfectly delicious." If eastern butter is in such disfavor as the above remarks seem to indicate, our shipments will command excellent prices, for we send a good article, and are pleased to hear it is so fully appreciated.

EL DORADO COUNTY.—N. Gilmore writes us from El Dorado, that the grapo crop in that part of the county promises to be immense; also all other fruits except apples and peaches, and of these there will be a fair yield, but not quite as abundant as usual. We received from the same source a letter from R. W. Scott of Florida, to Mr. Gilmore, on the subject of Angora goat wool, its value, etc., which will receive attention.



A Story From "Nell Van."

[The following story is from Nell Van, our old Santa Cruz correspondent, who is now in New York. We do not know where she obtained it, but it illustrates the incompleteness of home without children, and the intensity of the passion of motherhood even among the poor.]

In a town in Central New York lived Johan and Christine Lubeg. They had come from the fatherland soon after their marriage, to better their fortunes. Many bitter hours did the good Christine spend longing for home and friends left behind. While Johan was away at the factory where he had plenty of work, she was never idle, and as the children came one after another, her labors increased. When six sunny haired boys and girls called her mother, she was suddenly brought to grief by the accidental death of their father while at the factory. This was a crushing blow, and in addition to their straitened circumstances another little one was added to their number shortly after. The wife of the proprietor of the factory proved an invaluable friend to Christine, frequently sending her presents of food and clothing. Through her instrumentality the two elder children obtained employment, and by degrees the dark cloud lifted and showed a portion of its silver lining.

Going, one day, to the house of this kind lady, with her six-months-old babe in her arms Christine was urged for the last time to give her the child for her own, since she had so many. "You see, Christine," she said coaxingly, "I can give the child everything to make its life happy, I have plenty, and yet without children I have nothing. We will do well by the boy and you shall come when you will to see him." Standing proudly forth, the mother nature, justly indignant, Christine spoke thus: "The good Lord; He make you rich with monish. He make me rich mit children. He make you poor mit taking your dear boy. He make me poor mit taking mine Johan. Him only can get mine babe from me. Oh ma'am this, mine baby boy must mit me stay to take my Johan's place. He no much trouble, he so much joy.

Tears was in the eyes of both, and the reference to the last one awoke a pang in the lady's heart which silenced her forever on the subject. Turning to the woman she said cheerfully, "Come, Christine, you have not seen my room since it was furnished. See I have but to open the door from the dining room and here I am in my pleasant sleeping room. Is it not convenient?" "Oh ma'am it is," said Christine, whose enthusiasm seemed incapable of expression in words. Over the bed there hung a picture of the head of Christ with the crown of thorns, seeing which, Christine, being a good Catholic, crossed herself and pointing to it stood mute and motionless. The lady said: "Yes, Christine, He, who came into the world to die for us, and who shared our earthly suffering that we might be saved, deserves to be ever before our eyes to remind us of His promises. My sufferings and trials have been lightened by thinking of His, as I look into His countenance so full of anguish. How such agony can lift us up out of our own suffering and give us strength. With an expression of the deepest emotion, stood Christine, her babe asleep in her arms, and her eyes fixed upon the pictures while as if assenting to the words just spoken she slowly uttered in an undertone, "Yes-sir-ee-ah."

TOUCHING DEVOTION.—One of the most tearful cases ever told on paper is this, of a little boy, a mere child, who traveled one thousand four hundred miles, taking care of the body of his dead mother all the way.

An expressman upon reaching his office early one cold morning in January, observed on the sidewalk a long heavy box, which his practiced eye at once identified as containing a corpse. Upon the end of the box, shivering with cold, sat a little half-clad boy, about seven or eight years of age. Addressing him kindly he said: "My lad, don't sit there, you will freeze. Come in and sit by the fire."

Bursting into tears the little fellow replied: "No, I can't come. My mother is in this box and I promised her that I would not leave her until we got home."

Deeply affected with the touching devotion of this brave little fellow, he finally succeeded in convincing him of the entire safety of his precious charge, and taking him to a neighboring restaurant, gave him a warm breakfast, and then learned the particulars of his story.

His father died about a year previously, in a remote village in Minnesota, leaving his mother in poor health and nearly destitute. She died but a few days before the boy's sad journey, charging the little hero with the sad duty of conveying the remains to a distant State, and furnished with (all she had) a sum of money barely sufficient to carry them both by freight cars to their destination.

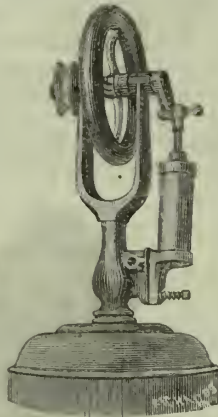
A CHRISTIAN ASSOCIATION of young women has been recently formed in Boston, and a lot secured for the erection of a home, to cost \$80,000.

Toys for Children.

It is both curious and instructive to mark the changes in the character of the toys placed in the hands of children at the present day, from those which were in vogue a few years ago. The present effort to combine instruction with amusement is most assuredly working a marked improvement upon the minds and character of the rising generation.

Heretofore we have obtained nearly all of our toys from Europe, (mostly from Germany) and very little attention has been paid to anything beyond mere amusement. Of late years our own inventors and mechanics have been turning their attention to such manufactures, and the result has been the most gratifying change above noted.

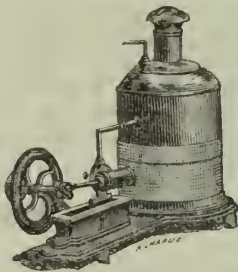
We herewith present two styles of toy engines, much superior in construction to similar toys heretofore sold. We have



here an upright engine, which is sold for \$2.50. It is a genuine steam-working engine, with pulley attached from which a belt connection may be made with any other toy which it is desirable to operate by steam.

Next we have a much superior device, in the horizontal engine.

The distinction between these two classes of engines may be thus most distinctly impressed upon the minds of the children:



This latter is a perfect model of its style, complete and perfect in all its parts, and well adapted to the wants of the student, school-room or parlor. It is sold for \$5, and is much better worth that sum than the first is worth half the amount.

These are no humbugs, but genuine steam engines, with boilers, cylinders, piston, fly-wheel, safety and throttle valves, and grooved pulley for imparting motion. They are designed for something more than mere amusement, for they will afford instruction to both old and young. The safety valve is so arranged that explosion is impossible, if the plain printed directions which accompany each one are followed.

These beautiful toys may be obtained of Wiester & Co., 17 New Montgomery street, San Francisco, who are general agents for the Pacific Coast. They can be sent by mail to any address.

HOME.—How touchingly beautiful are the relations of home! There each is bound by an electric train that seems to pass to all hearts in the family group, so that one cannot enjoy pleasure unless all partake of it. If one heart is oppressed, all sympathize; if one is exalted, all must share the happiness. It is in the home where the aching heart is soothed, where the oppressed are relieved, the outcast reclaimed, the sick healed, or failing, the tear of pure love drops from the mourner's eyes, when the dear ones are gathered to their long home. Sweet are the influences of home.

An Excellent Rebuke.

A lady riding in a car on the New York Central Railroad, was disturbed in her reading by the conversation of two gentlemen occupying the seat just before her. One of them seemed to be a student on his way home from vacation.

He used much profane language, greatly to the annoyance of the lady.

She thought she would rebuke him, and on begging pardon for interrupting them, asked the young student if he had studied the languages.

"Yes, madam; I have mastered the languages quite well."

"Do you read and speak Hebrew?"

"Quite fluently."

"Will you be so kind as to do me a small favor?"

"With great pleasure; I am at your service."

"Will you be so kind as to do your swearing in Hebrew?"

We may well suppose the lady was not annoyed any more by the ungentlemanly conduct of this would-be gentleman.

Dolly Vardens.

Dolly Varden kisses are said to be very choice.

The Heathen Chinese has got so that he wears a Dolly Varden queue now.

Iowa couples are married in buggies. They say it is the Dolly Varden style.

The lady who applied for a "Dollar Varden" was from the rural districts.

Memphis beaux wash their alimentary canals with Dolly Varden drinks.

"Looking at Dolly Vardens" is the absorbing amusement of young dandydom.

Some of the Southern Legislatures are now gotten up in Dolly Varden patterns—mixed black and white.

Dolly Varden night-caps and corsets are becoming popular. Those who have seen them say they are "perfectly sweet."

Our "nobby" youths will soon have an opportunity to display Dolly Varden vests upon their manly bosoms. So it is said.

The Dolly Varden bonnets are said to be the very neatest thing out.

EXTRACTING THE TEETH OF YOUNG PERSONS.—Unless they become extremely painful it is best to allow nature to conduct the process of shedding the first set of teeth. It would occupy too much room in this paragraph to give a reason for this advice. Therefore receive it as true without hesitation.

When the second set are developing, it is a common practice of some dentists to extract one somewhere in order to give room for others which are said to be crowding.

That is a serious mistake not to be perpetrated. If one is removed the jaw at once stops growing, and the result is a very different expression from what the individual would have had, provided all the teeth and jaw were harmoniously developed together. In consequence of that sort of unphilosophical interference with the law of dentition, one jaw or the other is smaller than it would have been. The whole character of the face becomes altered. Even distinct speech is sometimes impaired in that way. When caries takes place, after the teeth have completed their growth, they may be removed with less damage to the facial expression.

OCCUPATION.—What a glorious thing it is for the human heart! Those who work hard seldom yield to fancied or real sorrow. When grief sits down, folds its hands, and mournfully feeds upon its own fears weaving the dim shadows that a little exertion might sweep away into a funeral pall, the strong spirit is shorn of its might, and sorrow becomes our master. When trouble flows upon you dark and heavy, toil not with the waves, and wrestle not with the torrent; rather seek by occupation to divert the dark waters that threaten to overwhelm you with a thousand channels, which the duties of life always present. Before you dream of it, those waters will fertilize the present and give birth to fresh flowers, that will become pure and holy in the sunshine which penetrate to the path of duty in spite of every obstacle. Grief, after all, is but a selfish feeling, and most selfish is the man who yields himself to the indulgence of any passion which brings no joy to his fellow man.

EMERSON preached a whole discourse in a few lines thus: "The accepted and betrothed lover lost the wildest charm of his maiden in her acceptance of him; she was heaven while he pursued her as a star—she cannot be heaven if she stoops to such a one as he."

YOUNG FOLKS' COLUMN.

Naming Our Baby.

I was ten years old that summer,
Visiting auntie Lee,
When papa wrote me a letter,
With wonderful news for me.

Something strange had happened—
A little, new baby had come
Into our house in the city,
And I must quickly come home.

Hasten to kiss, and—name it;
That was the best of all—
That I could name the baby
Harry, or Tom, or Paul.

Auntie Lee had a baby,
Bouncing, and strong, and quick;
He pulled my dolly's arm off,
And his name was little Dick.

We, too, had now a baby;
And I thought of many names—
George, and Walter and Willie,
Neddie, and Jack, and James.

They took me home in the wagon
Quick, but not too soon;
Kissing papa in the entry,
I ran to mamma's room.

"Where is the baby, mamma?"
She moved the shawl on her lap—
There was the tiny stranger
In a snowy Shetland rap.

White lids shut in sleeping—
Cheeks as soft as silk;
Little blue-veined temples,
Sweet and white as milk.

Downy gold hair, parted
Over a tiny brow,
Just as mine when a baby—
Just as mine is now.

Not a baby brother—
A little fairy girl—
A darling, precious sister;
And so I call her Pearl.

Go Home, Boys!

Boys, don't hang round the corners of the streets. If you have anything to do, do it promptly, right on, then go home. Home is the place for boys. About the street corners, and at the stables, they learn to talk slang, and they learn to swear, to smoke tobacco and to do many other things which they ought not to do.

Do your business, and then go home. If your business is play, play, and make a business of it. I like to see boys play good, earnest, healthy games. If I was the town, I would give the boys a good, spacious playground. It should have plenty of soft green grass, and trees and fountains and broad space to run and jump, and to play suitable games. I would make it as pleasant, as lovely as it could be, and I would give it to the boys to play in, and when the play was ended I would tell them to Go Home.

For when boys hang round street corners and the stables, they get slouchy and listless. Of all things I dislike a listless boy or girl. I would have a hundred boys take a hundred yachts, with every spar straight and every rope taut, the decks and sides clean, the rigging all in order, and everything ready to slip the cable, and fly before the wind when the word comes to go.

But this cannot be if you lounge about the streets, and loaf about the corners, and idle away your time at the stables and the saloons.

When you are from home have some business; attend to your business, and then, Go Home.—S. S. Scholar.

PLEASANT SAYINGS FROM PRETTY LIPS.—"Why do you say, in the Lord's Prayer, 'Who art in Heaven,' since God is everywhere?" asked a clergyman of some children.

For awhile no one answered. At last, seeing a little drummer-boy who looked as if he could give an answer, the clergyman said:

"Well, little soldier, what say you?"
"Because it's head-quarters," replied the drummer.

"SUSIE," said a teacher to one of her pupils, "you shouldn't make faces. You will grow up homely if you make faces." Susie looked thoughtfully in the teacher's face a moment, and then innocently asked, "Did you make faces when you was a little girl?"

In the State of New York there are 28 orphan asylums, sheltering 9,000 children.

DOMESTIC ECONOMY.

Kindling Coal Fires.

We give below, from the *Journal of Health* some hints with regard to kindling coal fires in addition to those given on page 27 of the present volume:—

Before coal kindles it must be heated through and through, made hot enough to blister the fingers in an instant, although still black. It is easy to see that a small bit of coal will get thus heated sooner than a larger one; hence the smaller the coal, the sooner it will ignite.

Coal must be kindled with wood. The wood will give out a certain amount of heat, and no more; and as a given amount of heat is necessary to kindle the coal, the more wood, and the less coal, and the smaller the pieces, the sooner and more certain will the fire be lighted.

In the face of these facts, persons are frequently seen in the rail-cars, when the fire in the stove is low, to put on a large amount of coal, the result being that the more coal put on, the more the fire will not burn, because the small amount of heat is distributed over a large amount of coal, all of which is heated some, but none of it heated enough for ignition. The more a coal fire is stirred, if a little low, the more certain it is to go out.

The best way to replenish a coal fire is to put on a small amount of coal while it is burning well; and after this is thoroughly kindled, and has been red for a short time, add a little more coal. In this way a fire may be kept burning a whole day in a grate without using the poker once; and good housekeepers know that every time a poker is used, the ashes fly in every direction, and valuable time is expended in brushing them up. If the poker must be used, the time to do it is when fresh coal has been thoroughly kindled, for then there is no danger of its going out.

If a coal fire is burning too much, either cover it with some of the ashes which have fallen through the grate—this makes the mass more compact, and diminishes the draught—or if it is desirable to put the fire out altogether, as when going to bed, press the coal down from the top with a shovel or blunt-edged poker.

It has been the custom to use the largest sized coal for the furnaces; this requires a great waste of wood in kindling, besides, much time is lost in firing up in the morning, the very time when most heat is wanted, and wanted quickly. It will take less coal, and give incomparably more comfort, to feed a furnace with coal, the largest piece of which is not larger than a hen's egg, only taking care to put on a little coal every hour. Observation and close calculating economy has shown this to all our river boats, tugs, and steamers.

The Best Way to Keep Potatoes.

Potatoes should always be kept in the dark. Intelligent rural housekeepers need not be told this; but many others, living in towns and cities, should know that potatoes exposed to the light for a day only, have their flavor injured; and the longer they are exposed the worse they are. Never use a greenish potato, as such tubers are unfit for human food. When Irish potatoes are removed from the cellar, they should always be spread out thin on the floor, in a cool building. If the apartment is not dark they should be covered with boards, to exclude the light. It is a good practice, also, to cover them with clean straw or sawdust. The injury done to potatoes by the light, after they are carried from a dark cellar, is the chief reason why there is such a universal complaint of poor potatoes in the spring and during the forepart of summer. Every sort of vegetable that grows in the dark—beneath the surface of the ground—should be stored in a dark apartment; while those vegetables and fruits which mature in the light, will ripen more satisfactorily, and develop a more luscious flavor, if they are stored in a light room.

MELTON VEAL.—This is a standard dish at the Melton Races in England, and is composed of alternate slices of veal and ham. Butter a good sized bowl and slice as thin as possible six hard-boiled eggs, then line the bowl with the slices. Place in the bottom a layer of raw veal steak in thin slices, and sprinkle over it a small quantity of salt, pepper and grated lemon-peel; proceed in the same way with thin slices of raw ham, but leave out the salt. Fill up the bowl in this manner. Cover it with a thick paste of flour and water, so stiff as to be rolled out. Tie a double cotton cloth all over the top and boil three hours, putting it into boiling water at the first, and keeping the water just below the level of the bowl. When cooked, take off the cloth and the paste, and let the veal stand until the following day; then turn it out on to a platter, and cut very thin after it comes to the table; garnish with sliced lemon and parsley. It is "a dainty dish" to set before a king. It is also delicious as a side dish for dinner, and makes a good breakfast.

WHITENING FLANNEL.—Immerse the flannel for an hour in a dilute solution of acid sulphate of soda, and then stir in a dilute of hydrochloric acid in the proportion of one part of acid to fifty of water. The vessel is then to be covered over and allowed to remain for a quarter of an hour, when the articles are to be removed and thoroughly washed.

Dutch Cheese.

A correspondent of the *Rural New Yorker* wants to know how "Dutch Curds are made," to which it replies: We suppose this inquiry is concerning the making of what is known as cottage cheese, in some sections called Dutch cheese or curds. It is the curd of sour milk drained from the whey, pressed into balls or moulded in small fancy shapes, and eaten when fresh, or soon after it is made. Some people are very fond of Dutch cheese or curds, and the process of manufacture is so simple and so well known, that we supposed every "good housewife" was well posted in regard to its making.

The milk is allowed to sour and become lopping or thick, when it is gently heated, which facilitates the separation of the whey. The curds are then gathered up, salted or otherwise to suit the taste, and pressed in small moulds, or formed with the hand into suitable shape, when it is ready for the table, and may be used immediately. In cool weather, when milk does not readily thicken, the sour milk may be put in a suitable vessel set in hot water over the range. The milk is then stirred for a few minutes, when the whey will begin to separate, and it is removed and another batch may be treated in the same manner.

In summer some use large cans, having a spigot near the bottom; the sour milk is placed in these cans, and allowed to stand in the sun to thicken. The heat of the sun will be sufficient to separate the whey, which may then be drawn off through the spigot. The curds are then removed to a sink having a slatted bottom, over which a strainer cloth is placed. The curds thrown upon this strainer cloth are soon drained of the whey, when it is pressed into balls with the hand, or moulded into forms.

Sometimes this kind of cheese is potted and left to decompose, and when it has acquired a strong, villainous smell, it is regarded as most delicious by those who have acquired a taste for eating it in this state. In some markets cottage or Dutch cheese finds a ready sale, and quite a profit is made by certain butter-makers, in turning their sour milk into this product.

WASHINGTON PASTRY.—A sojourner in Washington sends the following: I am particularly fond of lemon pie and ice-cream for dessert. At — hotel I went on peacefully for a couple of weeks, but always eating lemon pie under a silent protest, for I was a stranger, and did not like to make objections. Finally, I called a waiter and said:

"John, I have nothing to say about the ice-cream, but what kind of a pie is this?"

"What kind of a pie did you order, sah?"

"I ordered lemon pie, but this appears to be dried apple."

"Dat's a lemon pie, sah. You know dey has a way of mexin dried apples in the lemon pies here, sah, to dat extent it requires a man of ability to 'stinguish 'em apart, sah. De lemons is sease, you know, and dey has to 'conomize 'em so as to make one lemon do for sixteen pies."

FRESH-CAUGHT FISH.—There is a white curdy matter very plainly seen between the flakes of fresh-boiled fish, which imparts much flavor to the fish. The excellence of the salmon broiled over a fire, or cooked on skewers, is doubtless due to the presence of a large quantity of this curdy substance, the fish being cooked as soon as caught. For this matter, which is defined as "a film of albumen produced by the coagulation of the serous juices intervening between the muscular layers," evaporates rapidly after the fish is dead; therefore fish are eaten in perfection only directly after they are caught.

TOMATOES IN IRON POTS.—There are a thousand and one things I would like to know, (and probably shall, in time, unless I have to learn how to vote), but this I do know, that tomatoes must not be cooked in an iron pot. Some beneficent housekeeper, following in the footsteps of the illustrious "scrapple" maker, gives a recipe in last week's *Rural* for a cheap soup, in which she directs the ingredients to be put in an iron pot. I sometimes, at good tables, taste tomatoes which have been made bitter by this process. If the intention is to medicate them, the result will satisfy the design.—*Rural New Yorker*.

LIVE WITHIN YOUR MEANS is a good principle to keep in sight in all matters of Domestic Economy. If your income is five dollars a day, spend but four. If it is one dollar, spend eighty cents. If it is but ten cents, spend nine. If it is three potatoes, save half a potato for seed. Thus you will gradually acquire something, while, if you spend and consume as you go, you will never get ahead one inch in life, but every sunset will look on you poorer than at sunrise, because you will have used unprofitably one day more of your strength and your allotted term of life.

ICING PASTRY.—When nearly baked enough take the pastry out of the oven, and hold over it till the sugar is melted, a hot iron shovel. The above method is preferred for pastry to be eaten hot; for cold, beat up the whites of two eggs well, wash over the top of the pies with a brush, and sift over this a good coating of sugar; cause it to adhere to the egg and pie crust; trundle over it a clean brush dipped in water, till the sugar is all moistened. Bake again for about ten minutes.

JOHNNYCAKE.—Beat one egg, add one cup of sour milk, one cup of sweet milk, one teaspoonful of soda, from one to three tablespoonfuls of molasses, salt, and stir quite soft.

To Purify Dairy Utensils.

Stand on end, in a convenient place for use, an open-ended vessel of suitable dimensions for the size of the dairy, say from half a barrel to a hoghead. In this slake some good quicklime, enough to make a thin whitewash when filled full of water, and cover to keep out the dust and dirt. The lime will settle, leaving a saturated solution of lime over it, as clear as spring water.

After using the milk pans, etc., wash them as other utensils are washed and rinsed, then dip them in the adjoining cask of clear water, giving them a quick turn, so that every part becomes immersed therein; set them to drain and dry, and the purification is complete without any scalding process, from the udder to the old worn-out pail.

The lime in the clear water instantly neutralizes the acidity of the milk yet remaining in the cracks or seams, etc., of the milk vessels, to destroy which the process of scalding has been performed. In the case of a very small dairy, or one cow, the clear water may, if preferred, be dipped out for the time being and poured gently back again, the lime purifying the water and keeping it good all summer.

Selected Receipts.

TO PRESERVE STRAWBERRIES.—To two pounds of fine, large strawberries, add two pounds of powdered sugar, and put them in a preserving kettle, over a slow fire, till the sugar is melted; then boil them for half an hour as fast as possible; have ready a number of small jars, and put the fruit in boiling hot. Cover the jars immediately, and keep them through the summer in a cold, dry cellar. The jars must be heated before the hot fruit is poured in, otherwise they will break.

TO PACK AWAY DRESSES.—Carefully fold in very dark blue paper, as highly glazed as possible. This will preserve the color of them, but they must also be kept in a dry place, or be occasionally unfolded and hung for a few hours in a dry room, and the paper be dried, too, otherwise they are sure to get spotted with mould.

CUT FLOWERS.—The first thing to be considered in arranging cut flowers is the vase. If it is scarlet, blue or many-colored, it must necessarily conflict with some hue in your bouquet. Choose rather pure white, green or transparent glass, which allows the delicate stems to be seen. Brown Swiss-wood, silver, bronze or yellow straw conflict with nothing. The vase must be subordinate to what it holds. A bowl for roses. Tall-spreading vases for gladioli, fern, white lilies, and the like. Cups for violets and tiny wood flowers. Baskets for vines and gay garden blossoms. A flower-lover will in time collect shapes and sizes to suit each group. Colors should be blended together with neutral tints, of which there are an abundance—whites, grays, purples, tender greens—and which harmonize the pink, crimsons, and brilliant red into soft union. The water should be warm for a winter vase—cool, but not iced, for a summer one. A little salt or a bit of charcoal should be added in hot weather, to obviate vegetable decay, and the vase filled anew each morning. With these precautions your flowers, if set beside an open window at night, will keep their freshness for many hours even in July, and reward by their beautiful presence the kind hand which arranged and tended them.

ARSENIC IN COLORED CARPETINGS.—Hallwachs has found that not only green but also the red-colored carpetings frequently contain arsenic. He particularly asserts that the brilliant dark red colors now so greatly in demand, contains enormous quantities of this poisonous substance. The goods burned with the blue flame of arsenic, and gave its characteristic garlic odor. Enough of the color could be rubbed off with the finger to give a distinct precipitate of arsenic with the usual reagent, and in solution in hydrochloric acid covered some copper pieces with the greyish coating characteristic of the substance.

POTATOES, which are a dearer food than meat for the supply of flesh, are far cheaper as a source of heat to the body, so with this view we associate them in our meals. Cheese gives us cheap flesh but dear fuel, so we take it with bread, which supplies the latter economically. The making of palatable mixtures of various kinds of food forms the art of cookery. It is a maximum as old as Hippocrates, that "whatever pleases the palate nourishes," and it is only when taste becomes depraved by indulgence that the pleasure of eating becomes contemptible.

A WESTERN paper gives the following recipe for keeping potatoes, and asserts that it will preserve them for years: Dust over the floor of the bin with lime; put in about six or seven inches deep of potatoes, and dust with lime as before. Put in six or seven inches of potatoes, and lime again, and repeat the operation till all are stowed away. One bushel or lime will do for forty bushels of potatoes, though more will not hurt them, the lime rather improving the flavor than otherwise. The lime may be used for fertilizing after this use of it.

BED BUGS.—Take as much common salt as a quart of cold water will dissolve, and wash the bedstead thoroughly. After a few trials there will be no occasion to repeat the process.

Something about Potato Culture.

"M." writes as follows to the *W. L. Ztg.* concerning the use of large or at least quite large potatoes for seed, and especially concerning the use of whole potatoes which has been urged as a necessity for producing the best crops and for guarding against disease.

As there are many farmers who believe in the necessity of planting whole potatoes in order to secure good crops and therefore go to the expense of buying seed or else plant other crops rather than to cut the potato for seed, I think I can safely state to such that whole potatoes are no necessity, and that pieces can give just as good crops, indeed even better, according to my experience. I would point to the fact known to many, that small farmers using always small pieces and oftentimes only the eyes (which they have removed by means of a spoon) have raised just as large and healthy vegetables as their richer neighbors with large and whole potatoes. I think I can also state that repeated experience shows that the potato rot, when once it has appeared in a region, has never spread in proportion to the use of whole or of cut seed, but always extended according to the situation and density of the soil. I have made many experiments which have shown me that sliced potatoes used for seed produce crops larger in quantity than those from whole seed, and of equal quality.

The facts may, perhaps, be explained in the following manner: Every one knows that the potato is a plant which demands exceedingly little for its propagation. It grows and even yields fruit without soil and almost without light in a cellar. It is also known to many that the sprouts repeatedly removed from a potato and planted in the earth can grow and give remarkably large crops as well as the seed potato. The young potato plant has no need, then, of a mother seed, to say nothing of its necessity of a large and whole one.

Granting, however, that the plant needs the substance of the seed potato for the commencement of its career, it does not follow that it demands large and whole potatoes for its better growth. I may refer here to the well known fact that our cultivated plants generally give better results when standing singly, than when crowded together and mutually weakening one another. So when a large potato is planted and sends out many sprouts, these cannot get so much nourishment and grow so strong as when through division of the seed each eye has a place for itself. This is seen most plainly with young beet plants. Where several grow from one seed hill they are always weaker than where they are single or few in number; and when they are not soon separated, they weaken one another to the extent that they never attain the growth of the individual plants.

Commercial Value of Peanuts.

The culture of peanuts in California is every year extending, at a large profit over cost of production, simply as a nut to be eaten in theatres and rail cars, by the hoodlum element and by almost everybody else, when and where they can get a good chance; and though agreeable and valuable as an article of food in all countries, yet their greatest value lies in the oil they contain. It is easy of extraction, and is equal to olive or almond oil for every purpose for which these oils are used; and in many parts of the world is sold for pure olive oil, and is fully equal to it for all alimentary purposes.

It is said to keep a longer time without becoming rancid than any other vegetable oil; and as an illuminating oil, it gives a superior light. If cold-pressed under favorable conditions it yields a large percentage of oil, but if heated before pressure the quantity of oil is increased, but its fine flavor is somewhat impaired as a table oil.

The hotter the climate the larger the percentage of oil. The nuts, after being roasted and ground fine are also an excellent substitute for chocolate, and large quantities are used in tropical countries for that purpose.

WOOD PAPER.—A. Ungerer, of Semmering, near Vienna, has manufactured paper wholly from wood by a process which he declares easily carried out on a large scale at a small cost. Dr. Wiesner, of Vienna, has examined his samples, and declares that they are remarkable for their pure white color, the fineness, length and strength of the fiber, and the softness. The paper is uncommonly thick and strong, and not at all brittle.

THE PURE MILK ASSOCIATION of Boston has gone about its business of supplying pure milk in a business manner.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., May 30.

FLOUR—We note a good local demand with a good inquiry for export. Sales reported embrace 8,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 4,000 Oregon extra. Considerable quantities of extra are being sent East by rail. We quote prices as follows:

Superfine, \$1.87½@5.12½; extra, in sacks, of 196 lbs. \$6.50@6.62½; Oregon brands, \$5.75 @6.50 in sacks of 196 lbs.

WHEAT—The market has been quiet at unchanged rates since our last review. Sales aggregate 20,000 sacks fair to choice at \$2.00@2.15 @ 100 lbs. Quotable at close at \$2.00@2.15 @ 100 lbs.

The latest Liverpool market quotations come through at 12s. 10d. @ 13s. per cental.

BARLEY—Market quiet. Sales embrace 7,000 sacks ordinary coast to choice bay, at \$1.37½@1.55, which is the range at close.

OATS—Market has been steady during the week under review. Sales 3,000 sacks ordinary coast to choice bay, at \$1.60@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.55@1.60 @ 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.75 @ 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.50 per 100 lbs.

RYE—Is quiet at \$2.00@2.15 per 100 lbs.

STRAW—Quotable at \$8.00@8.50 per ton by the cargo.

BRAN—Is selling at \$17@17½ per ton from the mill.

MIDDLINGS—For feed, are \$22.50@25 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light, with a fair demand. Prices are nominally \$17.00@23.00 for fair to choice @ ton. The best old wheat will bring the latter figure.

HONEY—New is selling at 20@25c in the comb, and 12@16c strained; old in comb 8@15; do strained 8@11c per lb.

POTATOES—The demand is fair. Sales of new at \$1.75@2.12½ per 100 lbs; old Tamales and Petaluma in good condition are dull at 35 @10c., and good Humboldt at 50@60c. per ctn.

HOPS—The Bulletin says: We know of only one small lot in first hands and that could probably be sold for 70c. The prospect for good prices during the ensuing season is excellent.

HIDES—During past week 2,050 Cal. dry sold at 18½@19½, and 2,690 salted at 8½@9½c.

WOOL—The market is still very quiet and prices are nominal. Receipts are large and stocks are accumulating, but sales are light. There is no improvement in the market. Sales aggregate about 375,000 lbs at 40@45 for average lots.

TALLOW—Market weak at 8@8½c. @ lb. **SEEDS**—Flax 3c.; Canary, 5@6c.; Alfalfa, 16@20c; Mustard, 3@6c. for the different kinds.

PROVISIONS—California Bacon 13@14½c; Oregon, 13½@14½c; Eastern do. 11½@12½c for clear and 11 @13 for sugar-cured Breakfast; Cal. Hams 11½@15; Eastern do. 14½@15½c; California Smoked Beef, 14c. per lb.

BEANS—Market continues firm and the following are jobbing rates: Pea \$1.00@1.25; small White \$1; Small Butter \$3.50, large \$4.00; Bayo, \$1.25; Pink and Red are scarce.

ONIONS—Good yellow and red are brisk at \$1.50@2.00.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c; Pecan, 25c @ lb.; Hickory, 12c; Brazil, 16c; Chili Walnuts, 15c.; Italian Chestnuts 25c.; Eastern Chestnuts, 15@20c.; French Almonds, 25@30c.; Princess Almonds, 35@40c.; Los Angeles Walnuts, 20c; Cocoa-nuts, \$8.00@10.00 per 100.

FRESH MEAT—The controversy between the wholesale and retail butchers has been settled in favor of the latter. Lambs are now dressed part with plucks in and part with them out, to suit customers, and prices are the same. Beef and pork have both declined. We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8 @ lb. do. 2d quality 6@7 @ lb.; do. 3d do. 3½@5c.

VEAL—Quotable at 6@10c.

MUTTON—6½@7c. @ lb.

LAMB—Easier at 9@10c.

PORK—Undressed grain-fed is quotable at 5½@6c. dressed, grain-fed, 7@8½c. per lb. **POULTRY**—Live Turkeys, 25@27c. @ lb.; dressed, 28 per lb.; large Hens \$3.50@4.00; Roosters, \$8.00@9.00 per dozen; Spring Chickens, \$4.00@5.00; Ducks, tame, \$7.50@8.00 per doz.; Geese, \$12@15 @ dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in free supply and active demand; it may be quoted at 22½@27c., with a few choice lots at 30; New Irish is quotable at 22½@26c; old is dull at 12½@20c.

CHEESE—New California, 12½@14½c; Eastern is jobbing at 21@22c. @ lb.

EGGS—California fresh, are 30c. @ doz.; Eastern 20@22½. Oregon, 25.

LARD—California 12½@13½; Oregon, none

in market. Eastern in cases 14@14½c.; do in tcs. 11½@12c. per lb.

FRUIT.

Tab. Oranges, M. 16 30@20 00	Corrants,	8 @ 10
California do. 15 00@10 00	Apples,	2 00 @ 3 50
Limes, @ M. 15 00 20 00	Pineapples	7 @ 9c
Austrian Lemons, M. 10 00 50 00	Strawberries	do 5 @
Cal. do. 10 00 50 00	Cherries,	10 @ 40c
Bananas, bunch 2 50 @3 50	Apricots,	25 @

DRIED FRUIT.

Apples, $\frac{7}{8}$ lb.....	8½ @10c	Pitted, do $\frac{7}{8}$ lb....	20 @ 22½
Pears, $\frac{7}{8}$ lb.....	9 @10	Raisin, $\frac{7}{8}$ lb.....	5 @15
Peaches, $\frac{7}{8}$ lb.....	9½ @11	Black Figs, $\frac{7}{8}$ lb....	6 @ 8
Apricots, $\frac{7}{8}$ lb.....	— —	White, do	15 @20
Plums, $\frac{7}{8}$ lb.....	5 @10		

VEGETABLES.

Cabbage, @ doz.....	50 @ 75	Cucumbers @ doz 1 00 @ 1 12 1/2	
Garlic, @ lb.....	8 @ 3 1/2	Summer squash, lb.....	3 1/2 @ 4c
Rhubarb @ lb.....	2 @ 5	Asparagus, @ lb.....	4 @ 5c
Green Peas.....	2 @ 3	Tomatoes.....	—
Sweet Peas.....	—	String Beans.....	3 @ 4c

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report an active inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Burlap sacks 17½@18c.; Flour sacks 17½@18c. for qrs. and 15½@16½c. for hlfs. Standard Gummies are jobbing at 20@21c.; Wool 75@80c.; Hessians 40 inch goods 14@14½c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete.

BUILDING AND FENCING MATERIALS—The local trade has been good with a very active demand for export. Receipts are light, owing to a scarcity of vessels, and stocks are reduced. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine clear \$4.50@4.55; Cedar \$5.00@5.5. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange.

Puget Sound Pine—	
Rough, @ M. 22 50	
Fencing and Skipping, @ M. 35 00	
Fencing, second quality, @ M. 25 00	
Laths, @ M. 3 00	
Fencing, @ lineal foot. 3 c	
Redwood—	
Rough, @ M. 22 50	
Rough refuse, @ M. 17 00	
Rough Pickets, @ M. 18 00	
Rough Pickets, pointed, @ M. 20 00	
Rough Pickets, @ M. 30 00	
Siding, @ M. 25 00	
Tongued and Grooved, surfaced, @ M. 37 50	
do do refuse @ M. 25 00	
Half-inch surfaced, @ M. 35 00	
Rustic @ M. 40 00	
Batten @ lineal foot. 3 c	
Shingles @ M. 3 00	

Sugar Pine is retailing at \$55 for clear and \$40 for second quality, and Cedar at \$60 @ M.

COFFEE—Costa Rica 20½c; Guatemala 18c. Java 26c; Manila, 19½; Rio 19½@20; Ground Coffee in cases 30c.; Chicory, 12½. **SPICES**—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 @ doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 @ doz.; Mace \$1.50 @ lb.; Ginger 15c @ lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c@5½, Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2@3 @ doz for 1@2-b cans respectively; Pickled Cod, \$4.50 in hf bbls and \$3 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, 10@10.50; in kits No. 1 \$2.25@2.50; do No. 2, \$1.75@2.00. Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 @ ream.

PAINTS—White Lead 8@12½c; Whitening, 2½c.; Chalk 2c.; Paris White 3c.; Ochre and Venetian Red each 3½; Red lead and Litharge each 10½@11c. @ lb.

RICE—Sales of China No. 1 at 7½@7¾c. and No. 2 at 7@7½c @ lb; Siam, quotable at 7@7½c in mats; Carolina Table, 10@11; Hawaiian, 9½@10c per lb.

SUGAR—We quote Cal. Cuba at 12½c; Circle A Crushed, 12½c. and Granulated 12c; Golden C. 10½@11c; Hawaiian 8½@10½c. as extremes @ lb.

SYRUP—Prices may be given as follows: 57½c in bbls, 60 in hf bbls, and 65c in kegs.

SALT—California Bay sells at \$5@5¼; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 @ ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c. and Castile, 13@13½c @ lb.

TEA—We quote Young Hyson at 70c@1.15; Gunpowder, 85c@1.15; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Soulong 45c @1.00; English Breakfast Congou, 50@55c; Basket 50@65c. per lb.

State University.—The next term of the Preparatory Department will begin April 20th, 1872.

The course of study embraces the Ancient and Modern Languages and the higher Mathematics, and is specially adapted to the University curriculum.

Terms, \$12 a term. GEORGE TAIT, Oakland. 1333 1/2 St.

CLIPPING PAPERS.—To induce further patronage for agricultural papers on this coast, we will hereafter furnish to new subscribers the CALIFORNIA AGRICULTURIST (a \$1.50 monthly), with the PACIFIC RURAL PRESS, for one year for \$4.50. Present subscribers to the RURAL can also receive the AGRICULTURIST for one year by sending us 75 cts. additional to their regular subscription to our paper.

Coughs and Colds are often overlooked; a continuance for any length of time causes irritation of the Lungs or some Chronic Throat Disease. "Brown's Bronchial Trochets" are an effective Cough Remedy.

San Francisco Retail Market Rates.

THURSDAY NOON, May 30, 1872.

MISCELLANEOUS.						
Butter, Cal fr. lb.	35	@	40	Flour a/s, gr.....	10½@	11
do Oregon, lb.	25	@	30	do Hll.....	16	21
Honey, @ lb.	25	@	30	Potato G. Y. Bags.	20	28
Chusses, @ lb.	20	@	25	do Second-hand lb	12	16
Eggs, per doz.	40	@	50	Deer Skins, @ lb.	15	22
Lard, @ lb.	18	@	20	Sheep skins, w/ on	50	75
Sugar, cr., 7 lb.	1 00	@	1 00	Sheep skins, plain.	12½	25
Brown, do, @ lb.	9	@	13	Goat skins, each.	25	30
Beet, do, @ lb.	12	@	15	Dry Cal. Hides.	18½	19
Sugar, Map. lb.	25	@	30	Salted, do.....	9½	10
Plums, dried, lb.	15	@	30	Dry Mex. Hides.	17½	18
Peaches, dried, * 20	@	30		Salted, do.....	9½	10
Wool Sacks, new	82½	@	85	Codfish, dry, lb.	10	12½
Second-hand, do	82½	@	85	Locks, Wood.	60	100
Wheat a/s, 22c 15	@	15		Tallow,	8½	10
PRODUCE, ETC.						
Barley, ex, @ blb. 6	@	6 25		Barley, cwt.....	1 50	21 65
Superfine, do 6	@	6 00		Beans, cwt.....	1 00	59 01
Corn Meal, 100 lbs	3 00	@	3 50	Bar Lima Beans @	1 00	8
Wheat, @ 100 lbs	2 40	@	2 41	Hay, @ ton.....	17 00	25 00
Oats, @ 100 lbs.	1 60	@	1 75	Potatoes, @ ctl	75	111

PRODUCE, ETC.	
Flour, ex. @ bbl. 6 00 @ 6 25	Barley, cwt. 1 50 @ 1 65
Superfine, do 6 00 @ 6 25	Beans, cwt. 1 00 @ 1 05
Corn Meal, 100 lb. 3 00 @ 3 50	Dry Lima Beans @ lb. 8
Wheat, @ 100 lbs. 2 40 @ 2 60	Hay, @ ton. 17 00 @ 25 00
Oats, @ 100 lbs. 1 60 @ 1 75	Potatoes @ ctn. 75c @ 1 00

POULTRY, GAME.		FISH, MEATS, ETC.	
Chickens, grieve	87 1/2 @ 80	Fish, D'field	— @ 25
Turkeys, 1/2 b.	60 @ 30	Whittaker's	— @ 25
Ducks, wild, 1/2 b.	60 @ 30	Johnson's Or.	— @ 25
Tame, do.....	25 @ 25 50	Flounder, 1/2 b.	15 @ 18
Geese, wild, 1/2 b.	— @ 60	Salmon, 1/2 b. nov.	12 @ 15
Tame, 1/2 pair, 2	50 @ 60	Pickled, 1/2 b.	6 @ 60
Hens, each.....	75 @ 60	Rock Cod, 1/2 b.	12 @ 15
Snipe, 1/2 doz.....	50 @ 30	Perch, water, b.	8 @ 10
English, do.....	50 @ 30	Perch, water, h.	— @ 15
Pigeons, 1/2 doz	60 @ 50	Lake, 1/2 b.	— @ 25
Wild, do.....	20 @ 30	Sincls, large 1/2 b.	8 @ 60
Hares, each.....	40 @ 50	Small doz.....	— @ 12
Rabbits, tame, 1	75 @ 60	Silver Smelts.....	15 @ 20
Beef, tender, 1/2 b.	15 @ 20	Salms, 1/2 b.....	30 @ 35
Turned, 1/2 b.....	10 @ 12	Small per 100	— @ 20
Smoked, 1/2 b.	15 @ 18	Toncod, 1/2 b.....	15 @ 20
Pork, rib, etc., 1/2 b.	15 @ 15	Terrapin, 1/2 doz	60 @ 60
Clams, 1/2 b.....	15 @ 15	Mackerel, 1/2 ea	— @ 15
Veal, 1/2 b.....	13 @ 20	Sea Bass, 1/2 b.....	— @ 15
Outlet, do.....	— @ 20	Milbairt.....	— @ 75
Mutton chops,*	12 @ 15	Sturgeon, 1/2 doz.....	5 @ 5
Lamb, 1/2 b.....	15 @ 18	Clams, 1/2 doz.....	50 @ 50
Tongues, beef, ea	— @ 75	Clams, 1/2 doz.....	50 @ 50
Tongues, pig, ea	— @ 15	Crabs, 1/2 doz.....	60 @ 50
Eason, Cal., 1/2 b	18 @ 20	Soft Shell.....	— @ 50
Oregon, do.....	16 @ 20	Salmon.....	12 @ 15
Flams, 3/4 c.....	— @ 25	Prawns.....	16 @ 20
		Sardines.....	8 @ 15
* Per lb. † Per dozen.		1 Per gall'n.	

POULTRY, GAME, FISH, MEATS, ETC.

Corrected weekly by Hooker & Co., 117 and 119 Cal. street.			
PRICES FOR INVOICES			
Adding price rule from ten to fifteen per cent. higher than the following quotations.			
THURSDAY, May 30, 1872			
IRON.—			
Scotch Pig Iron, $\frac{3}{4}$ ton.....	\$70 00	@	—
White Pig Iron.....	52 00	@	—
Best Bar, bad assortment, $\frac{3}{4}$ b.....	05 00	@	06
Refined Bar, good assortment, $\frac{3}{4}$ b.....	06 00	@	07
Boiler, No. 1 to 4.....	05 00	@	06
Plate, No. 5 to 9.....	08 00	@	09
Sheet, No. 10 to 13.....	06 00	@	07
Sheet, No. 14 to 20.....	05 00	@	07
Sheet, No. 21 to 27.....	06 00	@	07
Horse Shoes.....	8 00	@	—
Nail Rod.....	11		
Norway Iron.....	6		
Rebbed Iron.....	9		
Other Irons for Blacksmiths, Miners, etc.	6	@	7
COPPER.—			
Sheathing, $\frac{3}{4}$ b.....	21	@	28
Sheathing, Yellow.....	24	@	26
Sheathing, Old Yellow.....	11	@	11 1/2
Composition Nails.....	24		
Composition Bolts.....	24		
TIN PLATES.—			
Plates, Charcoal, 1X $\frac{3}{4}$ box.....	12 00		—
Plates, 1X Charcoal.....	10 00		10 50
Roofing Plates.....	11 00		—
Banca Tin, Slabs, $\frac{3}{4}$ b.....	—		45
STEEL.—English Cust, $\frac{3}{4}$ b.....			
Drill.....	16		17
Pig Bar.....	17		17
Plough Points.....	3 75		50
Russia (for mould boards).....	12 1/2		—
OFTENSLIVER.— $\frac{3}{4}$ b.....			
LEAD.—Pig, $\frac{3}{4}$ b.....	06		06 1/2
Sheet.....	05		8 1/2
Pipe.....	9		10
Bar.....	08		10
ZINC.—Sheets, $\frac{3}{4}$ b.....	10		10 1/2
Bar.....	25		—
Box or crude.....	5		—

San Francisco Metal Market.

Corrected weekly by Hooker & Co., 115 and 119 Cal. street.

PRICES FOR INVOICES

Shipping prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, May 30, 1872

IRON.—	
Scotch Pig Iron, @ ton. 20 00 @ 22 00	
White Pig, @ ton. 22 00 @ 24 00	
Refined Bar, bad assortment, @ lb. 05 @ 06	
Refined Bar, good assortment, @ lb. 06 @ 07	
Roller, No. 1 to 4,	05 @ 06
Plate, No. 5 to 9,	06 @ 07
Plate, No. 10 to 13,	06 @ 07
Sheet, No. 14 to 20,	07 @ 08
Sheet, No. 21 to 25,	06 @ 07
Horse Shoes,	8 00 @ 9 00
Nail Rod,	11 @ 12
Norway Iron,	9 @ 10
Hotted Iron,	6 @ 7
Other Irons for Blacksmiths, Miners, etc. 6 @ 7	

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, May 30, 1872.

SOLE LEATHER.—The demand is good, with an advance in Eastern market, which will probably soon be felt here.

CITY TANNED LEATHER, @ lb. 26@29

Santa Cruz Leather, @ lb. 26@29

Country Leather, @ lb. 25@28

Stockton Leather, @ lb. 26@29

French skins are firmer with an advance in some grades.

Heavy California skins are firm, with an upward tendency.

Jeodot, 11 to 19 Kil, per doz. 72 00 @ 90 00

Jeodot, second choice, 11 to 15 Kil, @ doz. 60 00 @ 75 00

Levone, 16 to 18 Kil, per doz. 75 00 @ 77 50

Levone, 12 and 13 Kil, per doz. 68 00 @ 70 00

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Endless Chain Elevator, FOR RAISING WATER FROM WELLS.

BALL & CRARY, Patentees.



The inventor claims that his ELEVATOR excels any other apparatus that has ever been brought before the public for the purpose of raising water from wells. Its chief merits are: First—The water is obtained from the well in a purer and colder state, for the reason that it is drawn from near the bottom. Second—It is operated with the least difficulty, particularly in lifting a certain amount of water from any depth in a given time, as compared with any other mode. Third—It obviates all necessity for going down into the well in putting in the machinery, or for repairing the same, as such labor can be performed at the surface. Fourth—It can be easily taken out of one well and transferred to another. Fifth—It is less liable to get out of repair—but when repairs are necessary they can be easily made by any one; the action made by the Endless Chain and buckets keeps the well properly ventilated; there is no possibility for the person operating it (nor for a child) to fall into the well.

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JOHN A. BALL,
Grass Valley, Nevada Co., Cal.

20v24awbp1m

R. M. CHAMBERLIN & CO.,



COMMISSION
Merchants
AND DEALERS IN

Flour, Grain,

WOOL,

Hides, Butter,

Eggs, Etc., Etc.

N. B.—Office of
the Oil Cake Meal
Co.

SEEDS of all kinds advised and furnished by application.

238 Clay Street, near Fourth.
22v3-3m

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine.

Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S WYNKOOP & CO., 2054 Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa.
22v3-3m

THRESHING AND REAPING Lubricating Oil.

We invite attention to this superior Lubricator, specially for all out door machinery exposed to the dust and dry air of a California climate. Being of HEAVIER GRAVITY than Spirit, a less quantity is needed. It neither gums or becomes thick and sticky, like the ordinary machine oil in common use, with a saving of from 15 to 25 per cent. in reduced friction, and at a cost 50 per cent. less than the best Lard Oil.

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424 Davis street, SAN FRANCISCO.

From ALL SIZES
3 to 30
Horse
Power.
Hooley's
Portable Engines
Sole Agents
TREADWELL & CO

"THE HOOLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco.
14v24 cowbp

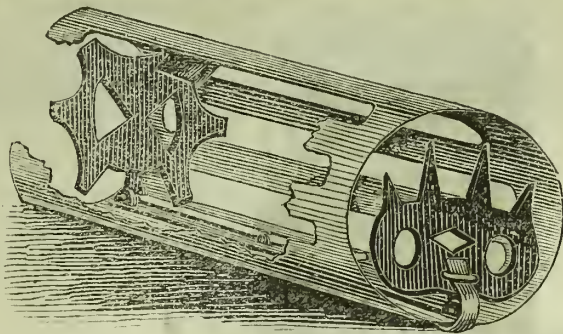
MOWER and REAPER SECTIONS

On hand and made to order at Lowest Prices by the
PACIFIC FILE WORKS,
53 Beale Street, S. F.

New FILES on hand. Old FILES Re-Cut.
19v3-3m

San Francisco Wire Works,
NO. 665 MISSION STREET,
Near Third Street.....San Francisco.
C. H. GRUENHAGEN & CO.

WOOD'S PATENT GOPHER TRAP.



ORDERS RECEIVED AT THIS OFFICE.

RETAIL PRICE.—\$1.50 each; in clubs of 5, \$1.25. By mail, postage paid, 50 cts. extra.
We can recommend this California-made and invented Trap to the many inquirers who have applied to us for a good article.
DEWEY & CO., No. 338 Montgomery Street.

"Clear as Crystal."



PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscope, for Spectacles. In Europe and in the Eastern States they are superceding glass.

Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain. They are much harder than glass, and DO NOT SCRATCH.

The best quality of Crystal is found in Scotland and the Brazils, and is manufactured into lenses by the best workmen in England and France, for

Thomas Houseworth & Co.,
OPTICIANS,

No. 9 Montgomery street, Lick House,

Where they can be obtained, already fitted, in frames, or may be fitted to order.

Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses.

Illustrated Circular for style of frames sent to any address free.

22v Pebbles sold as such by us, are Warranted.
15v3awbp3m

H & L AXLE GREASE.



The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

HUCKS & LAMBERT.

The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus

Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERT

Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.
3v24-cowt

WILLCOX & GIBBS

IMPROVED NOISELESS

Family Sewing Machine
IS THE BEST IN THE MARKET.

It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

Its Work Received the First Premium
At the San Francisco Mechanics' Institute Fair, 1871.

Don't Fail to Examine.

PERFECT SATISFACTION GUARANTEED.

Other Machines taken in part payment.
Call on or address

WILLCOX & GIBBS S. M. CO.,

113 Post Street, S. F.
22v2-3m

EGGS FOR HATCHING

FROM

THE FINEST BRED FOWLS IN AMERICA.

Twelve First Premiums

At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
DARK BRAHMAS, Imported from England and Ireland;
HOUANS, direct from France;
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SILVER SPANGLED HAMBURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
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WHITE COCHINS,
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HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Turbits, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager,
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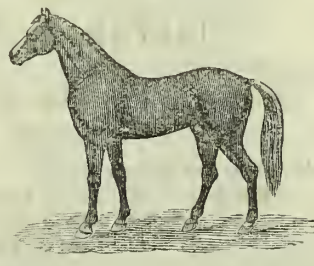
OFFICE—No. 113 Leidesdorff street.

YARDS—Cor. Laguna and Washington streets.
4v3-3m-16p

THE IMPORTED

TROTTER STALLION

"NAUBUC."



Foaled in May, 1864, is seven years old, past, BLACK, with a small Star in the Forehead; fifteen hands, two and a half inches high, and weighed when five years old 1,000 pounds; sired by "Toronto Chief," by "Royal George," by "Black Warrior," by "Tippoo," by "Ogden's Messenger," a son of Imported Messenger, who was thoroughbred and out of the celebrated ten-mile trotting mare "Gipsy Queen," bred in Kentucky.

"NAUBUC"

Was bred by Thomas Vail, on Long Island, imported by DR. B. J. SMITH, arriving in San Francisco on the steamer "Colorado," Christmas Eve, 1868.

Terms for the Season:

\$50, Gold Coin, payable at or before the close of the season, July 1st, 1872.

Good pastures will be provided at \$1 per month, with the best of attention, but accidents or escapes at the risk of the owners.

Any gentleman having a trotting mare, with a record of 2:40, or a thoroughbred mare, will be made welcome to the services of "Naubuc" this season.

With the compliments of

DR. BARLOW J. SMITH,
637 California Street, S. F.

The horse is in charge of the experienced groom, NED CUNNINGHAM, at the Naubuc Breeding Farm, San Lorenzo, Alameda County.

Owing to the increased patronage that this horse is receiving, the season will be continued until the 1st of August.
22v3-4wsa

FRESH GARDEN SEEDS.

ALSO,

Grass and Clover Seeds.

ALFALFA.

Trees, Plants, Roots, Etc.,

For Sale at Wholesale or Retail by

GEO. F. SILVESTER,

No. 317 Washington Street,

Send for a Catalogue.

GUANO.

100 Barrels Guano for Sale,

In quantities to suit purchasers.

6v2-1y-16p

GEO. F. SILVESTER.

OAKLAND POULTRY YARDS,

Corner Sixteenth and Castro Streets.

SEASON OF 1872.

Eggs for Hatching from Pure Bred Poultry

Carefully packed in handled boxes with elastic bottoms, and guaranteed to carry safely to any part of the country.



Send Stamp for Circular to

GEO. B. BAYLEY,

Importer and Breeder of

CHOICE POULTRY.

P. O. Box 659, San Francisco.

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Importer and Breeder of

Angora or Cashmere GOATS

—OF—

PURE BLOOE

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ALL GRADES.

For sale in lots to suit purchasers. Location, four miles from Railroad Station, connecting with all part of the State. For particulars address

N. GILMORE,

El Dorado, El Dorado county,
California.

5v3-4f

WIRE,

All Kinds and Sizes,

For Fencing, Bailing Hay, Etc.

For Sale by—

A. S. HALLIDIE,

519 Front Street, San Francisco.

11v3-3m-16p

GLEN FLORA

Stock Breeding Association.

Successors to C. C. & R. H. Parks, Waukegan, Ill. Organized under the laws of the State of Illinois.

Importers and Breeders of

SHORT-HORNED CATTLE

Thoroughbred and Trotting Horses, Cotswold Sheep, Improved Berkshires, and Pure-Bred Poultry in Great Varieties

Stock of all kinds for sale at reasonable prices. Send for Catalogue giving full description. Address

C. C. PARKS, Pres't.,
WAUKEGAN, ILL.

13v3-4f



PURCHASERS please say advertised in Pacific Rural Press



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful test. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are:

1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.

2d—It can be run with a STIFF or LIMBER POLE, as desired.

3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.

4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.

5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow, Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by
HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. Sent at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

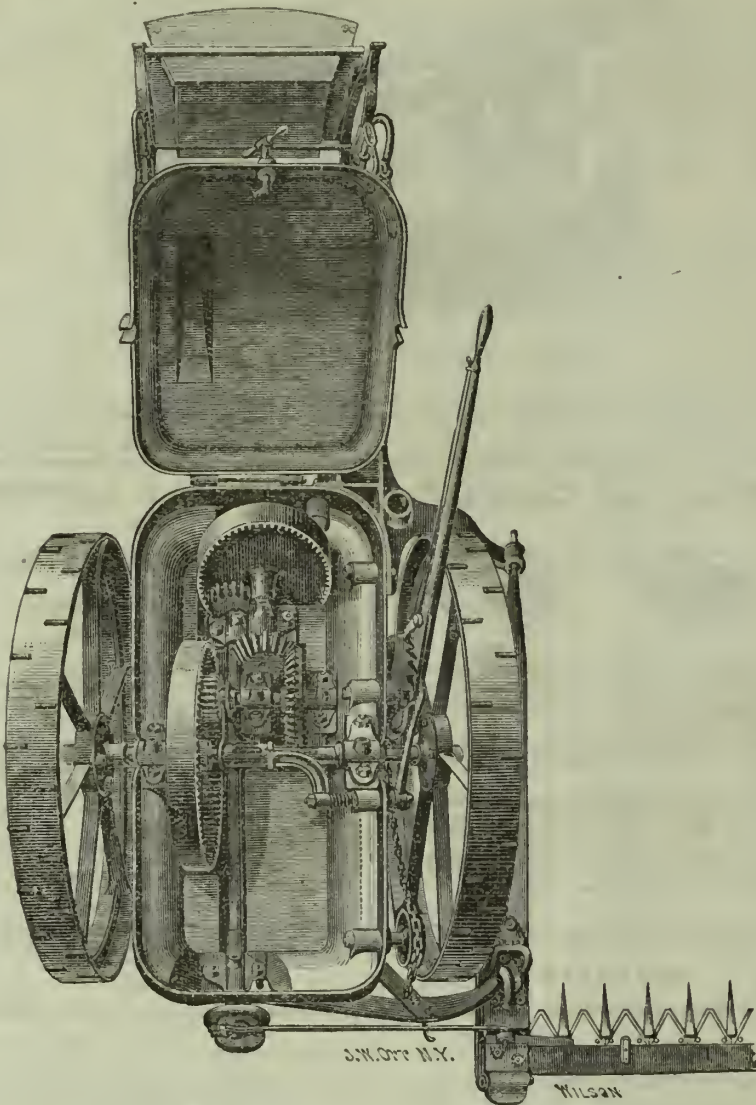
This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to
MATTESON & WILLIAMSON,
Stockton, Cal.

14v2-3m

E. J. FRASER, M. D.,

Surgeon and Homeopathic Physician,
No. 102 Stockton street,..... San Francisco, Cal.
Surgical cases from the country received and treated at the Homeopathic Hospital.
Letters answered promptly.

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains. ITS GEARING IS SHAPED TO STANDARD GAUGE, and EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water, Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAFT and the same DURABILITY which pertains to CUT GEAR in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most Intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

"There is no other Harvester."

For Prices and Complete Information address

LINFORTH, KELLOGG & CO.,

Nos. 3 and 5 Front street,.....San Francisco.

Importers and Jobbers of Foreign and Domestic Hardware.

SOLE AGENTS FOR THIS COAST FOR

The World Reaper and Mower,

Ball & Co.'s Ohio Reaper and Mower,

Ball & Co.'s Ohio Tornado Thresher,

Woolworth Handle Works—Ax, Pick and Sledge Handles,

Rumsey & Co.'s Lift & Force Pumps,

Enterprise Manufacturing Company—Self-Measuring Molasses Gates, Patent Tap Borers, Coffee Mills, Etc., Etc.;

Leavy Railroad Lantern,

Electric Cross-cut Saws,

Proprietors and Manufacturers of the Gerrish Submerged Force Pump.

12v3 6m

MARCUS C. HAWLEY & CO.,

108 and 110 Front Street.....SAN FRANCISCO.

Importers and Dealers in

Hardware and Agricultural Implements

FOR THE HARVEST OF 1872.

Buckeye Mowers,

Buckeye Mowers and Reapers,

Buckeye Mowers—new model

Haines' Genuine Headers,

Sweepstakes Threshers,

Horse Powers.

Hollingsworth Sulky Rakes,

Hay Presses, Seed Drills,

Steam Engines, Etc., Etc.

Also, a full stock of PLOWS, HARNESS, CULTIVATORS, and all kinds of HARVESTING IMPLEMENTS. Send for Circular giving full description.

MARCUS C. HAWLEY & CO.,

10v3-3m

10 and 12 Pine Street and 108 and 110 Front Street, San Francisco.

"The Head of the Family."

NICHOLS, SHEPARD & CO.,

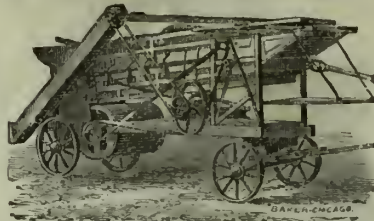
Grain-Saving, Time-Saving, Money-Making

"VIBRATOR" THRESHERS,

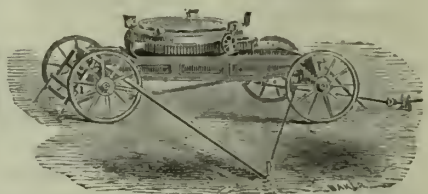
AND THEIR ELEGANT CONVERTIBLE

"Mounted" Horse Powers.

Office and Factory at Battle Creek, Michigan.



Recognized, in the trade and in the field, as the "leading thresher" of the period. FULLY ESTABLISHED through many years of successful use. ENDORSED by more than sixty thousand farmers and grain raisers who have employed and used them. IN USE in eighteen states and four Territories, with largely increasing demand and growing popularity. UNIVERSALLY COMMENDED as embodying the only true principle, and pronounced the "coming machine." PRESENTMENT for saving grain, saving time, fast work, perfection of cleaning, adaptation to varying conditions of grain, convenience, ease of draft, and ease of management. PECULIARLY ADAPTED to handle Flax, Timothy, Alfalfa and other seeds, so difficult with others. IN DEMAND by grain raisers, at remunerative prices, while neighboring machines are idle. ATTRACTIVE in simplicity of parts, having only four belts and one set of gears. SPECIALLY NOTICEABLE for making no "litter," and requiring no "cleaning up" process after it. ASCERTAINED BY FARMERS to save them the cost of their threshing bills, by the increased saving of grain alone, over and above the best of others. OBTAINING the "pick" of jobs and extra prices for its work. UNRIVALED in durability, handiness, ease of management, ease of draft, elegant finish, substantial construction.



THE ELEGANT "MOUNTED" POWER—mounted on four wheels, where it remains when in operation. ATTRACTIVE FEATURES: securely fastened with two stakes; levers, trunnion rods, etc., carried with it; the "angling" line shaft, by which all short links are avoided in "coupling up"; all boxes, journals, shafts and gear independent of the wood frame; gears "clutch" on; only one key used; convertible to different speeds, at trifling cost, to match other machines; of the lightest draft, very durable, easily and cheaply repaired; sold separately, if desired, and speeded to match other separators or machinery.

ALL PERSONS who think of buying a new Thresher and want the "leading machine," and all farmers who raise grain and want it threshed, saved and cleaned to the best advantage, are cordially invited to send me their address, and receive (FREE) our Illustrated Pamphlet and Circular, containing a full description of these superior machines, with other valuable information.

JOHN NICHOLS,
285 K street, SACRAMENTO.

20v4-2m

WOOD'S MOWERS AND REAPERS.



THE WALTER A. WOOD,

Mowing and Reaping Machine Co.

Will sell a First-Class MOWER, REAPER or COMBINED MACHINE, for a Less Price than any other First Class Machine is sold on this coast.

A Full Stock of Extras constantly on hand for all our Machines.

Also, all kinds of EXTRAS for Wood's Improved Haines' Header.

Branch Office, 112 and 114 Front street, San Francisco.

E. S. WHITCOMB,

14v3-cow-2m

General Agent.

C. P. SHEFFIELD. N. W. SPAULDING. J. PATTERSON.



Pacific Saw Manufacturing Co.,

17 and 19 Fremont Street, San Francisco.

REAPING AND MOWING MACHINE SECTIONS made to order—Three Dollars per Dozen. SAWS of every description on hand and made to order. All work warranted. 11v3-1f

The most Simple, Durable, and in all respects the most Economical of all Steam Pumps. Uses the same steam twice instead of once. Any person can run it. They are used on the Central and Western Pacific R.R. from Oakland to Ogden. They are used for Water Works, Mining, Irrigation, and all other ordinary pumping. Send for Descriptive Circular and Price List to
Address ALLEN WILCOX, No. 21 Fremont street, San Francisco. 16v2-3m

THE BEST IS THE CHEAPEST.

The SELF-moment on this can be desired. quickly attached, driven by a very chain, dispensation and cog is under perfect and large or raked at will, or to rake automatically. Grain is delivered by the machine, out team. The rake is dropped to pick up grain when lying close to the ground, while the machine is in motion. This Raking Attachment is very Light and very Strong.



Champion Self-Raking Reaper & Mower.

WE CLAIM FOR THE CHAMPION DURABILITY AND FREEDOM FROM BREAKAGES.

No farmer can afford to buy a machine that is poorly built, or in which inferior stock is used. Few accidents in the course of a year are so serious, as regards expense, and certainly none so trying on the patience as a "break-down" in harvest.

Our claims for the superiority of the Champion in this essential particular are founded, First, on the wrought-iron frame used on all of our Combined Machines. This frame is strongly riveted together and well braced, and upon it the shafting and hoxing are firmly bolted. No wooden or cast-iron frame—the former liable to warp, twist and decay—the latter to constant and fatal breakages—can equal one of strong, wrought-iron bars.

Second, to the first-class material and workmanship throughout every part of these machines. No one now denies, either manufacturer or dealer, friend or rival, that the "Champion" is

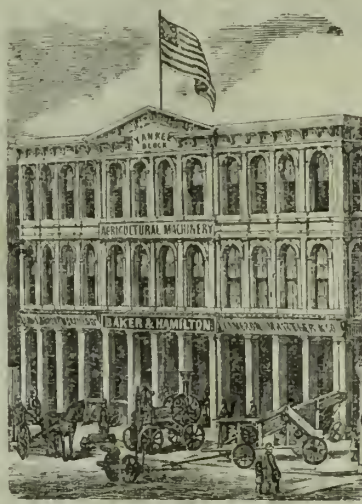
THE BEST MADE MACHINE IN THE MARKET.

This most enviable reputation has been obtained by the expenditure of a vast amount of money in the purchase of the best materials and the employment of the best mechanical skill. We do not claim that we offer these machines for the fewest dollars. In fact, it is difficult to determine just how low some machines can be bought from dealers determined to push their inferior and poorly made machines, of which they have an over supply, or from agents anxious to make their commission and work off "old stock." To all such we offer no rivalry. There may be farmers so involved in debt that they find it to their interest to buy these poor machines, but they are of the class who must stock their farms with second hand implements and broken down teams. To the well-to-do farmer, who is willing to pay a fair price on fair terms of credit for a first-class implement, we offer the

CHEAPEST MACHINE IN THE MARKET.

REGARD being had to material and workmanship employed—durability, and amount and quality of service in grass and grain cutting. To this class of farmers we submit the "Champion" Machine for their careful inspection, even with a difference of ten to twenty dollars in the selling price over many of their competitors, and ask them to apply the same wise business principle which leads them to decide promptly a difference of fifty to one hundred dollars in the value of one horse over another.

RAKING ATTACH-machine is all that It is easily and ed by two bolts, is strong and powerful ing with all compli-gearing. The rake control of the driver small gavel can be the rake can be set ically, delivering a revolution. The ered at the side of of the way of the is particularly adap-lodged and tangled and very Strong.



Nos. 13 to 19, Front St., San Francisco.

THE CHAMPION with wrought-iron any wrought-iron Drive-Wheels, and Cutter-Bar Connect-frame, secures the strength and dura-least weight. In points of the Guard-turned down to cut to the ground; or pass rough or stony the machine is work-ing apparatus may ed from the ground, structions while Cutter-Bar folds for transportation.



This cut represents the Improved "Champion" No. 4 Mower, (right-hand cut,) to which can be added a Self-Raking or Dropping Attachment.

NO. 4 MOWER, frame, station-axe for the wrought-iron tion to the main greatest possible bility with the mowing. The fingers can be lodged grass low turned up, to places, while ing; or the cut-be entirely raise to pass over ob-cutting. The very convenient

Our new Tipping Arrangement for cutting lodged grain or grass is one of the most valuable recent improvements upon a Harvesting Machine. It enables the driver, by a lever conveniently arranged, instantly to control the points of the guard fingers up or down in grain or grass, and is equally valuable in Reaping or Mowing.

In reaping, grain can be cut clean by means of this device, that heretofore was run over and wasted, and at the same time when the lodged patches in a field have been passed the driver can INSTANTLY change the cut while in the standing grain, avoiding the heavy draft that would otherwise follow if cutting all the time low to the ground.

This arrangement is equally valuable in mowing grass, enabling the driver to dip the cutters down in badly lodged grass, instantly take it clean from the ground and then raise as the machine is moving, to cut higher in the standing grass.

The frame of this machine is made of four bars of wrought iron, double riveted at the corners. It is further strengthened by having the shaft for the main driving wheels firmly bolted across it. The power is communicated from both main wheels by means of internal gears meshing into pinions, which latter are upon a shaft, also lying across the main frame; on this pinion shaft is placed a bevel wheel, which in turn meshes into a bevel pinion upon a counter shaft, running at right angles to the above to the rear of the frame, and which counter-shaft has upon its further end the balance or crank-wheel, from which the power is communicated through the pitman to the knife.

The cutter or finger-bar is hinged to the rear side of the main frame. This hinged joint, indispensably necessary in a mowing machine, in order to allow the bar to lie close to the uneven and varying surface of the grass field, has caused much trouble to the inventor in order to give it the required flexibility with a strength sufficient to withstand the inevitable strain to which it is subjected when, as frequently happens, a spirited team is brought to a full stop by running it against an unseen stump or stone. The combination of flexibility and strength is obtained in the "Champion" by making the inner shoe of the cutter-bar quite long, and projecting the front and back ends of this shoe upward, so that through both may be passed a round rod of solid cold-rolled iron, which rod extends the full-length of the main frame, being fastened to the front and rear bars thereof; thus avoiding the difficulties incident to a joint no wider than the joint itself.

As a Mower, the "Champion" is as simple as could be made, were it not adapted for receiving the reaping attachments, and yet a Dropper, Self-Raker or Hand-Raker can at any time be added.

The Self-Rake is attached to the inside shoe at the cutter-bar, and rises and falls in unison with it.

Baker & Hamilton,

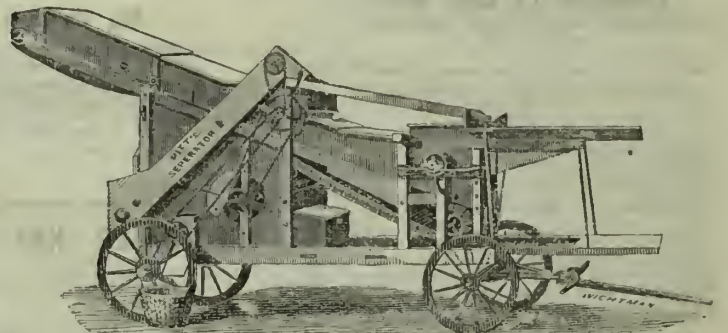
NOS. 13 TO 19 FRONT ST.,

SAN FRANCISCO,

—AND—

NOS. 9 TO 15 J ST.,

SACRAMENTO.

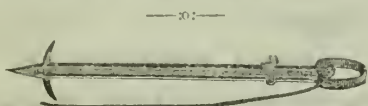


Pitt's Improved Separator—"THE CALIFORNIAN."



The Haines' Genuine Header, Imported in 1872.

THE HAINES' IMPROVED HEADERS offered by us, were imported this season, and consequently are greatly improved over everything on the coast. We have been agents for this reliable Header for a long time, and all sold by us have given entire satisfaction. It is impossible to enumerate the improvements put on our Machines this season. We believe we sell the CHEAPEST Headers in the market, if timber, cost of construction, and the valuable improvements which were made this year, are considered. The Header is nearly all Hard Wood. The drive wheel is eight inches wide, and has eighteen spokes, and the whole Header is made in the most thorough manner possible. Our supply of the Genuine Haines is limited, and we would suggest early orders.



Nellis' Original Harpoon Horse Hay Fork.

We accepted an invitation to witness the operation of the Nellis' Original Harpoon Horse Hay Fork. The trial took place a few miles from Detroit.

The fork itself is a beautiful and simple implement, not weighing over eight or ten pounds, easy to handle and operate, but it did not seem capable of lifting hay at all. The pulleys were soon adjusted, and the facility with which these pulleys were adjusted was a matter of special interest. They were suspended to the rafter by means of grapples and without the use of a ladder, and can be readily changed from one point to another, thus enabling the operator to carry his hay to any desired point in the barn. This saves a great amount of labor in "mowing away" (the most laborious part of hay-making). The same arrangement can be used in stacking. The hay had now arrived, the horses were attached, and the operation commenced, the load (about one ton) being removed and deposited in the farther corner of the barn in three fork-fuls, and the wagon sent to the field for another load. The operator now, without the use of a ladder, changed the pulleys in about one minute's time, and again commenced operation, removing the load (about 2,500 pounds) clean from the wagon at three forkfuls, in two minutes and twenty seconds; depositing it in the opposite corner of the bay, and in such a manner as to require scarcely any mowing away. To the farmers we would say such practical demonstrations carry conviction with them, and we must confess ourselves convinced of the great merit of this implement, and think farmers would consult their interest by making similar investigation. —Western Rural, Aug. 5, 1869.



Nellis' Pulley.

The entire fixtures necessary for unloading hay under all circumstances, except the rope, is one Fork, \$15.00; one set Grapples, \$3.50; one set pulleys, 4 in number, \$2.60; Flour Hook, 25 cents; amounting in all to \$21.35.



Nellis' Grapple.



Whitcomb's Wheeled Wire Horse Rake, \$45.

THIS IS THE SIMPLEST, CHEAPEST AND BEST WHEELED HORSE RAKE EVER INVENTED.

The head is operated by means of treadles, gives the operator more complete control over it than any other method, and also avoids that continual jerking on the horse, which is so objectionable in every other Rake. The driver's hands are always free for the management of the horse. Nine-tenths of the Wheeled Rakes used on this coast are sold by us, and are always Whitcomb's.

This is the acknowledged head of all SEPARATORS, and by continued improvements compels others to keep in the wake. Attempting to imitate and improve, without having a practical knowledge of what he desires to accomplish, an unskillful imitator brings forth a very poor representative of the original. The PITTS' THRESHER has stood at the head of Separators for a number of years, during which time innumerable aspirants for public favor have been introduced with great pretensions—have struggled and lingered through a few brief years, and then disappeared. The "CALIFORNIAN" has outlived all competition, and to-day stands higher than ever before. The Concave may be RAISED or LOWERED while the Machine is in motion. The Shoe is protected by guides, to which a Straw Stacker can be attached. No other machine has this. They are the only machines which required no altering last season. The TEETH are so arranged that it is impossible to crack the grain; yet it threshes CLEAN, and NO GRAIN goes over in the chaff or straw. Mr. BROOKS, a PRACTICAL THRESHER and MECHANIC, visited this coast from the factory, and adopted improvements suggested by the successful threshers here, and to them the machine is greatly indebted for its unparalleled success. Always buy the BEST. You will find it the cheapest in the end. The cost of repairs to the PITTS' is insignificant in comparison with other machines.

Baker & Hamilton,

SACRAMENTO,

ARE SOLE AGENTS FOR THE

Buckeye

REAPER AND MOWER,

FOR THE NORTHERN PART OF

California, Nevada, Utah and the Line of the C. P. R. R.



Volume III.]

SAN FRANCISCO, SATURDAY, JUNE 8, 1872.

[Number 23.]

Adaptation of Fruits to Localities.

Our climate is so diversified from the effects of ocean winds in some localities, and extreme altitude in others, that no other State of the Union can ever attain to the production of that infinite variety of the vegetable kingdom that pertains to California. The proper adaptation of fruits and vegetables to localities the most congenial to their perfect development and maturity, is here a subject of the first importance to the pomologist and horticulturist.

Our southern valleys are very nearly tropical, producing the orange, lemon, pomegranate, and the olive; the more central or middle valleys, half tropical, or with all the summer heat of the extreme south, but liable to occasional light frosts during the winter and early spring months; whilst in the extreme north, we have the New England winter, with all its fitful antics of cloud, rain, snow and sunshine commingled, and yet a summer of great heat.

Effects of Altitude.

But it is not altogether our great latitudinal extent that gives us our wonderful variety of climates, with all their diversified and apparently anomalous productions. Altitude above the sea, plays its freaks upon the vegetation in so remarkable a manner, as to set at naught all our preconceived notions that altitude, north or south, must govern us in our choice of localities, for the successful propagation of the particular products we may have resolved to engage in.

Take the proper altitude and the fruits of the Atlantic States are the same fruits here; but grow the autumn apples of the east in our lower valleys and they are simply summer fruits, whilst the Newtown pippin, Baldwin and Roxbury russet, their latest keeping winter apples, are found ripening with us in early or mid-winter.

Thus whilst one orchardist is growing these and other fruits in the valleys for autumn use, another whose home is in the mountains, in some elevated valley, or on a plateau of the foothills, is growing precisely the same fruits for winter and spring use, and yet within fifty miles of each other.

The wild strawberry ripens in the vicinity of San Francisco, under the cool ocean breeze, in April and May; the same variety, in Strawberry Valley and other valleys in the vicinity of Lake Tahoe, from the first to the middle of August.

The Reverse of Altitude.

Wild plums and apricots, ripening upon the mountain plateaus, where they are indigenous, if brought to the tropical warmth of the lower valleys are found to have their fruiting season hastened nearly six weeks, but with no improvement in flavor, though somewhat increased in size. The same effect of early maturity upon the blackberry and other mountain products are observable when transferred to the warmer lower valleys.

With these facts as data, the fruit grower can choose his locality, with reference to the kinds and qualities of the fruits he would produce, with much certainty, and no time need be lost in testing or experimenting with localities.

Farmers' Clubs.

If the Secretaries of the several Farmers' Clubs throughout the State will furnish us with the reports of their proceedings, we will gladly publish them. If they fail to send them to us, we intend to avail ourselves of such reports thereof as our exchanges bring to us, without pretending to vouch for their accuracy.

Japanese Bantams.

These beautiful and trim little birds have been highly praised for their peculiar and unique appearance, so much so that we have been induced to reproduce them in our columns from the *Rural New Yorker*. They were shown at the last Annual Show of the N. Y. State Poultry Society, where they attracted marked attention. It is said that their appearance is such as to make a decided impression, in their favor, on those who have seen them.

The *American Agriculturist* says "the whole form and style of these unique little fowls are such as to distinguish them from all others, although they vary greatly in color and marking among themselves. They are described as follows:

Their bodies are small and very compact; legs short and smooth; comb single, erect, and very large in both sexes; heads carried well back, making the fowls remarkably 'pigeon-breasted.' The backs almost disappear between the necks and tails. The tails are carried



JAPANESE BANTAM COCK.

more than erect, leaning forward, and in the case of male birds, frequently extending further forward than their heads. The fluffy 'coverts' at the base of the tails are quite remarkable. Their wings are carried drooping, like several other varieties of Bantams. The color is white, with black tails and tips of light feathers. They are a sprightly, vigorous, hardy breed, at present rather a novelty, and likely to bring pretty high prices for some time to come. They should be bred to preserve their peculiarities of form in the highest possible perfection; the plumage in each flock should be kept true to certain definite markings; very small size should be a requisite in breeding stock.

We are not aware that they have been as yet introduced into California, although we should suppose they would form at least a very desirable novelty in the poultry yards of our fancy breeds of fowls.

Rust—Wheat in spots begin to show rust, but we hear of none that is yet thought to be seriously affected. There is time enough however, for it to extend and work a good deal of injury, though we hope to escape any such disaster, says the *Contra Costa Gazette*.

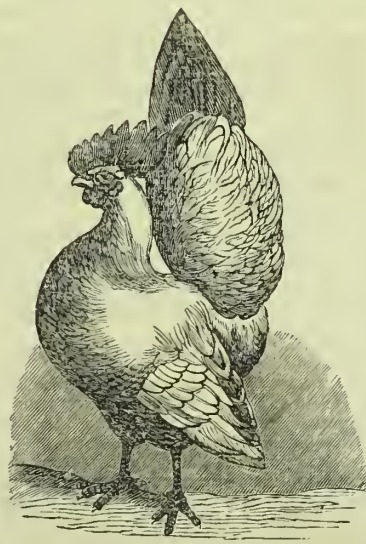
An Hour with the Wool Men.

We recently dropped in at the grand depot of Jas. Hartley & Co., graders and packers of wool, corner of Front and Broadway streets in this city, to take a look at the California wool clip of 1872. There we found an immense building, evidently built or fitted up expressly for the reception, storage, grading, repacking and shipment of wools. A large number of men with presses, were at work putting up the graded wool in packages of 525 pounds average, for transport by rail.

We were politely shown through the entire establishment by Mr. Hartley, who pointed out to us the different grades and qualities of wools, as grown in the different parts of the State, the causes of the inequalities, and where the poorest and best wools are produced.

Qualities North and South.

It would seem—without particularly naming flocks or localities—that the poorest wools come from the southern half of the State; the wool seems mixed with all manner of dust, dirt and



JAPANESE BANTAM PULLET

filth, with large quantities of burr; amounting in many instances to 30 and even 40 per cent. of the whole weight. This is just why California wools are in such bad repute with eastern manufacturers at the present time; and why it is not taken as freely as wools of equal value otherwise, from other countries.

In fact we were told by an eastern buyer, present at the time of our visit, that California wools are never sought for or taken, except at a very low figure, when any other can be procured. We are sorry to be obliged to make this statement as reliable, regarding our own wools; but we do it hoping that growers will make more determined efforts hereafter, to put their wools upon the market in better condition than ever before, and thus secure their full value.

Wool buyers and manufacturers will not pay the same price for burrs and dirt as for clean wool, and the sooner our wool growers understand this, the better it will be for them. The best wool in the State comes from Tehama and vicinity, or the northern half of the State. In all instances, the smaller flocks yield the cleanest wools.

Wool in Store.

It is estimated that there is now in store in San Francisco 8,000,000 pounds. This is

2,000,000 pounds less than last year. There had been shipped eastward this time last year 2,000,000 pounds; this year not to exceed 400,000 pounds. The whole of the 8,000,000 pounds on hand is to go east, our local manufacturers having nearly all obtained full supplies. This amount at thirty cents a pound average, looks up for somebody about \$2,400,000, until it can be sold.

Last year there were about forty eastern buyers amongst us; this year only ten or twelve, and of these, eight have returned home without buying, or but a few small lots. Articles published in eastern papers putting an undue importance upon the California clip of 1872, inflated prices in the early part of the season; but which have not been sustained, much to the disappointment of home speculators, but to the benefit of the producer who was lucky enough to dispose of his clip at the top figure.

An Error in Judgment.

It was evidently a mistake in supposing the California clip to be absolutely required to fill a gap supposed to exist in the grand aggregate of the year's wools; when the fact is, that were the whole 8,000,000 pounds now in San Francisco, to burn up within twenty-four hours it would not raise the price of wool in the eastern markets half a cent a pound.

Cashmere Goats.

At the wool depot we had the pleasure of meeting with Mr. Thos. Butterfield, the largest Cashmere goat importer and grower in the State; and also of Cotswold, Lincoln, Leicester, Texel and South Down sheep. From him we learn of the continued and complete success of the Angora goats, the pure bloods as well as the grades with the common goats. Of the latter, he estimates there are now in the State about 40,000, ranging from three-fourths to nearly full, or 63-64 of pure blood.

Of full bloods, he estimates the number in the State last fall at about 250, increased kids of last winter, 70, making about 350 in all. The demand for full bloods is constantly on the increase, and parties from all parts of the Pacific coast are making inquiries concerning them. The yield is from 4 to 7 pounds; worth from 40 to 80 cents a pound for the lower grades and from 80 cents to \$1.25 a pound for full blood wool.

Climatic Effect.

The few years these goats have been in California have been sufficient to demonstrate their perfect adaptability to the climate. The animal is increased in size and yields a heavier fleece than in their native country; are perfectly healthy and extremely prolific. Their wool here possesses a lustrous gloss, equal to the best Angora or Thibet fleece, and from the habit of the animal in feeding—which is always as far as possible to range singly, instead of compact numbers together, like Merino sheep, their wool is injured less by dust. The sheep feeds close to the ground; the goat climbs or reaches to any limb or bush for its leaves, to the utmost stretch of its body and legs. There seems no longer a doubt of their superior value over the sheep, particularly for all our higher mountain feeding grounds.

CALIFORNIA CAULIFLOWERS.—Four cases of cauliflowers, through in seven days from the stalks, were recently received in New York from Sacramento, California. The cases were packed each with eight dozen head, wrapped in paper, and the freight alone of the consignment amounted to \$68. This is the first lot of California cauliflowers received in eastern cities, and was sent as a sample to ascertain whether purchasers could be obtained and a market established for these and similar early vegetables.

CORRESPONDENCE.

The Right Help to Silkgrowers.

EDITORS RURAL PRESS:—I will take the liberty of writing you this letter in reference to our silk industry and in answer to an article on that subject in your last number of the RURAL, and headed "Help for Our Silk Growers."

Every one who has at heart the welfare of our fair State, and who takes a particular interest to silk culture, will certainly hail with delight any help toward the success of silkworm raising in California, from whatever source it might come. But, in my opinion, the principal help we can reasonably rely upon must be derived directly from us. Therefore, I say, let us start among us regular reeling establishments, or ateliers de moulinage, as they are called in France, where cocoons are reeled into grege, trams and organzines; and be sure that in this way, we shall have given to silk culture the best and most durable help.

In a series of letters to the Sacramento Union, last December, on this very question, I used the following language:—I see that this question, the reeling of cocoons, is not much understood, if what I am told is true—that the State Fair Board have the intention of awarding premiums for the best "family reel," they ignore that "reeling in family" is unexceptionable, and why? in the first place, manufacturing establishments in Europe will not buy a bale of silk short of 120 to 160 pounds, and the threads composing such grege or raw silk have to be uniformly equal in size, luster and quality. If reeled in the family, a bale of that size will be composed likely of skeins of twenty to fifty different numbers and qualities, which renders it unmistakable. The only way to overcome this defect is to have in each silk center a reeling establishment, where cocoons could be bought and there assorted and reeled.

It is of no use to try in California to reel our cocoons in the family; and if premiums have to be awarded for encouraging silk raising, let them be offered to reeling establishments of so many basins and reels. In this way, too, money will not be thrown away. Such establishments, I am satisfied, will do more toward building up on a sound basis our silk industry, than all the premiums awarded for either planting mulberry trees or raising cocoons.

There is an illustration of the subject at Gold Flat, near this place. I know an American, the owner of a nice little mulberry orchard planted five years ago; last year the said person raised silkworms that produced about 75 pounds of cocoons. Desirous of selling the latter, he wrote some time last winter to the "San Francisco Silk Co." to know whether they would like to buy his cocoons, and at what price; they never answered his letter; and this man, disgusted, is giving up silkworm raising as an unprofitable business, since he cannot find a market for his small crop of cocoons. I will add that it is the same thing in many other parts of the State with small silk growers.

Large producers, who generally have the means to send their goods even to a distant market, as Milan, can easily enough get rid of their goods. But it is quite different with small producers, and help from Milan, will be no help at all for them. It is the small producers that must, by all the means in our power, be helped and encouraged; it is only through him that we shall make of California a great silk raising State, for against one man that will be able to raise silkworms on a large scale, you will find hundreds able to raise them only on a small scale. And that is what made me say that the future success of silk culture laid entirely in the hands of farmers, and that, never will California be a silk-producing State, without the full cooperation of our farming and rural population.

Now as to the testing of our cocoons, previous to having one race raised in preference to another, I consider it of the first importance; and it was with that view that I forwarded to France, several months ago, a lot of cocoons raised by Ed. Muller, of this place, composed of the follow-

ing varieties: The French yellow annual, Montauban white bivoltine, and Syrian; the latter obtained from Utah, and which were the admiration of Mr. H. G. Ballou, from whom you procured the cocoon of which you gave a faithful cut in your number of March 21.

Those samples were directed to an old experienced silk grower, a cocoon trader in the south of France. As soon as I am in possession of his report, he having sent the cocoons to a regular reeling establishment, I will forward it to you. However, this old silk grower did say much about their qualities and defects.

The French annual—the very variety Mr. Muller has been selling to many parties in California and Mexico—are of a good quality, and in his opinion would produce a fine silk.

The Montauban bivoltine, although having a fine grain, are too weak to yield a good produce in silk.

As to the Syrian annual, they are of a very bad quality; and I advise you, said he, to abandon entirely that race, as I am confident it will give very bad results; besides the cocoons are weak and many are satines or glossy.

I am at present rearing a little lot of worms from eggs obtained from France, and belonging to the finest races of that country. Before raising silkworms on a large scale, I want first to have the race, whose silk will make the business the most profitable. Yours very truly,

FELIX GILLET.

Nevada City, May 27, 1872.

San Diego County.

EDITORS RURAL PRESS:—Starting on the 4th of the present month, from the Bay of San Diego, and taking a northeasterly course, fifteen miles of travel brought us to the Cacou valley. Grain drying up, even the seed will not be recovered. Climbing a steep acclivity of 1,500 feet to the plateau of San Vicente we find the air filled with the hum of bees from the hundreds of hives of K. G. Clark, one of whose aviaries are in this vicinity.

R. D. Lerry has an interest of 800 acres in the San Vicente Rancho, and is preparing to go into the Angola goat business. He is anxious to know where he can get a thousand common goats to begin with. From hence a perilous drive of fourteen miles brings us to Laguna Santa Maria. Strict enquiry at this point develops an elderly dame very hard of hearing, who never read a "vase in a newspaper in all her mortal days, but whose darter is mighty fond of sich." It is almost superfluous to add that they do not take the RURAL.

Soon after leaving Laguna we came upon the lower moist foothills where grateful verdure appears. At Mr. Locketts I saw grape vines eight years old that bore last season over a ton of grapes each.

This Ballena Section

Is or was part of the Santa Isabel Rancho, but the Warnocks and others, by seventeen years occupancy, have managed to retain a portion, and have made good grain every year. The live-oak, poplar, sycamore and cottonwood are scattered at intervals everywhere to the foot of the Mesa Grande where the pines begin to mingle with the oaks. It is opined that this section embracing Julian, will in a few years be the most thickly populated of any portion of the rural districts of California.

There is excellent water-power in the Santa Isabel creek, unimproved, because of the grant incumber; and at the risk of offending sensitive speculators in such necessities as air, water and land, we must say that we hope for some definite solution of the "grant" question before long.

The Weather.

On the 12th and 13th it rained; two days and three nights—an incessant, fine rain—how deliciously wet we got. Every thread, every fibre, every leaf, every root, well saturated. What a glorious change from the arid condition in which we left our bay ranchos. There is redemption for San Diego county, with every foot producing something—and some of the "feet" turning out some of the veritable yellow cubes; the day of salvation is dawning. The ranchers and miners are delightfully mingled, until one can hardly determine where to draw the line, if any is required between them. Agricola and Vulcan can here make merry without the assistance of Bacchus, although he persists in intruding.

Topography.

It would almost appear that Titanus and Cyclops had joined forces to plow such furrows through these mountains as San Felipe cañon; pointing their team southeast toward the Colorado there it is evident that they became unmanageable, and turned the wrong way, Vulcan throwing the land side toward the mountain, until the driver straightened up his team again for another furrow, through the Sierras at Puerto San Felipe, (toward Warners). Here in the center of the puerto is "Wil-

son's." "Hentz" has had the audacity to plant a vineyard right in the bottom of one of these furrows, and has about five acres in bearing vines. Now we strike off to the north, and at the northeast corner of Warner's Ranch find the meeting place of the live oak and "sage-brush" (a misnomer, for it is really wild wormwood; the wild sage being a diminutive shrub, while the commonly called sage stalk is, in some instances, four inches in diameter), the extreme southern point, where the vegetation of the Coast Range blends with that of the "desert"—Arizona shaking hands with the Pacific, through the prison bars.

Twenty-six miles through scattered, stunted oaks, and over sand and granite, alternately, brings us to Bergmans, at Oak Grove. "Jake" is a kind of pioneer, and has hewn out a wonderfully comfortable home here. He has frequently taken two crops from his land in one year; one of winter-sown barley, and one of corn; doing something, also, in the way of stock-raising.

Ten miles from Bergman's is the

Temecola Rancho,

Occupied principally by Indians and a few shepherds. In good years this ranch must be immensely productive; as it is, it supports some ten thousand sheep and horses, and the Indians have each a field of wheat or barley enclosed, which is being mown for hay, although it appears as if it would make grain. Wolf & Viel divide the honors with the native "kings," but we are not so sure about the division of profits. Twenty miles more of a northerly ride, over dry and deserted plains, brings us to the

Rancho San Jacinto,

eight leagues in extent, belonging to the heirs of the Estudillos, two of whom still occupy the ranch with cattle and sheep, but have sold undivided shares to several settlers who are improving in a progressive way, having cut a five-mile ditch to irrigate a portion of their land.

A Lone Star female, in hearing of where I am writing, says: "fer my part I'm goin' to git up and dust from here anyhow. When it comes to irrigatin' the grain, I ain't thar; you may stay if you min' to. I'm goin' to git up and git, leavin' you un's to your irrigatin' contraptions." F. M. S.

Cost of Raising Wheat.

Mr. Chas. R. Riley writes us from Morano, under date of April 27th, 1872, as follows: "I have seen several estimates, in the different papers on this coast, of the cost of putting in an acre of wheat, most of which were much below what they should have been.

In your last issue Prof. Carr makes a statement of prices that, if he would put in a harvest in accordance therewith, he would get the whole work in the valley. To commence with, he plows for 39½ cents per acre; sowing, 2½ cents; harrowing, 6 cents; heading, 23 cents; threshing, 22 cents; hauling, a very indefinite item, 37½ cents; and then gives a yield of twenty bushels per acre as a low estimate in a good year in the San Joaquin Valley.

Now for the facts of the case: Take the sandy portion east of the river, where most of the seed is sown by plows, the prices paid for work is as follows: Plowing, \$1.00 per acre; preparing seed, 25 cents; heading, \$1.25 per acre; threshing, 8 cents per bushel, besides the cost of feeding the threshing crew. The sacks will hold 2½ bushels; and range from 11 to 20 cents; it costs \$2.50 to send the grain on the cars, and from 50 cents to \$3.00 to haul and oad.

The west side of of the river is heavier soil and costs more. At Hill's Ferry, last winter, the price paid for plowing was \$2.00 an acre; one man with a seed sower and two horses can sow about fifty acres. The ground should be harrowed twice, say twelve acres to one man and four horses. The price paid was 30 cents for sowing and 60 cents for harrowing. On the last crop raised there, \$1.75 per acre was paid for heading; threshing, 8 cents per bushel. Marketing depends on the river, and as that generally falls about the time the grain is threshed, it has to be stored until winter.

The proportionate yield of the two sides of the river is greatly in favor of the west. If the grain makes anything it will yield ten bushels per acre, and in exceptional cases has yielded sixty, and will probably average twenty. On the east it goes as low as four and up to fifteen, and sometimes twenty, with a general average of from eight to ten.

The Poor Man's Rights.

We have received a communication on the subject of, "the poor man's rights, or how to make every man, woman and child rich and happy throughout the globe." The writer proposes that a law be passed making void all titles to lands, "owned by the rich," above a certain number of acres; he does not fix the number, but seems to incline to 40 acres as being about right; enough, however, to give support to a family. This he thinks would bring about "the glorious and long-looked-for millennium." We cannot see it in that light, and as long as government gives to every citizen

of the United States, who will occupy and improve it, 40 acres of land, why should we grumble because we find a man in possession of 80 acres, one half of it perhaps, a gift or inheritance. In this way we put the whole principle involved, in a very small nut-shell, saving us the printing of 5 pages of closely written manuscript, required by the writer in expressing his views on the 40-acre question.

The Manufacture of Tea.

EDITORS PRESS:—I find by your paper that something is being done in the way of experiment towards the manufacture of tea in California. I have much pleasure in sending you a few of the methods which I have successfully employed in India, commencing with green teas.

Green Tea—Process No. 1.

First day and night—1. Plucking the leaf; 2. Panning at 200° F.; 3. Rolling thoroughly (by machines or otherwise); 4. Expressing the juices by means of the hands or a press.

Second day—5. Slight evaporation of juices in the sun, or artificially; 6. Drying on the pan at 180°, gradually cooling the pan as the process proceeds; 7. Picking out stalks and coarse leaf.

Third day—8. Winnowing and sifting; 9. Packing.

Green Tea—Process No. 2.

First day and night—1. Plucking the leaf; 2. Roasting; 3. Rolling.

Second day—4. Exposure to the sun; 5. Rolling on trays meanwhile; 6. Drying over charcoal fires if still wet; 7. Drying on pans at 150°, gradually cooling to 130°; 8. Sifting and classifying.

Third day—9. Final drying on cool pan, to obtain color; 10. Pack hot.

Black Tea—Process No. 1.

1. Plucking leaf; 2. Spreading out thinly; 3. Exposure to sun and air; 4. Panning; 5. Rolling; 6. Exposure to air until completion of rolling; 7. Fermentation; 8. Spreading thinly to partially dry; 9. Final drying over charcoal; 10. Picking, sifting, etc.; 11. Packing.

Black Tea—Process No. 2.

First day and night—1. Plucking the leaves; 2. Spreading out thickly.

Second day and night—3. Exposure to air and tossing; 4. Panning at 180° or 200°; 5. Rolling and exposure to air; 6. Panning at 160°; 7. Rolling; 8. Spreading out thinly.

Third day and night—9. Partial drying in sun or otherwise; 10. Picking coarse leaf, etc; 11. Final drying over charcoal fires.

Fourth day—12. Sifting, separating, winnowing, etc; 13. Packing.

Very many other methods are in vogue, according to climate and the kind of tea required.

JAMES MACPHERSON,

4 Stoneleigh Villas, Erith, Kent, Eng.

Swamp Land Reclamation.

The Board of Swamp Land Commissioners was in session at Sacramento on the 24th inst., and was to continue in session until the important business presented before them was properly inaugurated.

President C. F. Reed, A. S. Bender and E. H. Straut, were present. G. W. Morgan was elected Secretary of the Board. Hon. S. W. Sanderson was chosen Legal Adviser of the Board. Swamp levee districts desirous of acquiring advantages under the Harvey Act, may now freely apply. Several districts are prepared to apply for the issue of bonds for reclamation purposes, and within ten days their desire will be fulfilled. It is supposed that the probable settlement of the Alabama claims will have a sensible effect on the operations of resident agents of English capitalists, who propose to invest in projects for the reclamation of swamp lands.

THE VIENNA EXPOSITION.—Congress has authorized the President to appoint one or more Commissioners on the part of the Government of the United States to the International Exposition to be held in Vienna in 1873.

THE IRON INTEREST.—The Brazil (Ind.), Manufacturer and Miner says: "The struggle for pig iron by the various mills of the country at the present time amounts almost to a panic. With an advance of from \$1.50 to \$3.50 a ton, the furnaces are not willing to make contracts ahead, and some of them even refuse to sell. And the prospect is that there will be a pressure on the entire furnace capacity of the country for some time to come."

MECHANICAL & SCIENTIFIC.

Ball Lightning.

At a meeting of the Am. Polytechnic at New York, March 20th, it was remarked that Mr. C. F. Varley has recently given to the Royal Society of London an account of new experiments made with a Holtz electric machine, having brass balls at the poles about an inch in diameter. A strip of wood about three inches in length, was bent around the negative pole, so as to project on each side of it towards the positive pole. On rotating the machine, two bright spots are seen on the positive pole. If the positive pole be made to rotate on its axis at the same time, the luminous spots do not rotate with it; but when the negative pole, with its filament of wood, is rotated, the spots on the positive pole rotate also. On interposing a non-conductor, like plate-glass, between the poles, the luminous spots disappear. On removing the wood from the negative pole, there was sometimes a glow over a large portion of the surface of the positive ball. If, in this state, two or three small pieces of sealing-wax, or even a drop of water, be placed on the negative pole, corresponding non-luminous spots will appear on the positive pole, and these spots will rotate when the negative pole is rotated.

It is evident that lines of force pass through the intervening air from the negative pole to the positive, a distance of about eight inches. This experiment, Mr. Varley believes, may explain the cause of "ball lightning." If a cloud be negatively electrified sufficiently strong to produce a flash from the earth, a point on such cloud would correspond to the projection of wood on the negative pole of the electric machine; and such point moving along the surface of the cloud would cause a responsive action near the surface of the earth, and a luminous spot would appear, which has been described as "ball lightning" by those who have witnessed this rare phenomenon.

In relation to the above, Dr. Bradley said:—"I think I have seen ball lightning. I saw it go into a mill, and it was all in flames in an instant. It seems to be totally unaccountable."

Dr. Van Der Weyde also said that he had once seen a ball of lightning, and that this was the first explanation of the phenomena which he had ever met with, having any appearance of truth.

Weather Waste of Coal.

The loss suffered by the exposure of coal to the weather is much greater than most people suppose. Dr. Varrentrapp has made this subject a matter of careful investigation, and the results of his analyses show in some cases a total loss in weight of a specimen, from this cause, amounting to 38.08 per cent., while its deterioration in quality for purposes of fuel or gas-making reached a still higher figure.

This change consists in a slow combustion, in which the volatile constituents—which are most valuable combustible elements—are gradually eliminated, while the relative proportions of carbon, ash and sulphur are comparatively augmented. It might be expected, now that the nature of this change is indicated, that anthracite (which has already gone through a very similar process in becoming what it is, by the loss of its bituminous matter) should suffer least of all coals from this action, and the result of analysis shows this to be the case. The density and compactness of this variety, aside from its chemical character, protect it in no inconsiderable degree. The cannel coals rank next in their power to resist deterioration from this source; while the bituminous varieties are the most susceptible.

The experiments of Dr. Varrentrapp are of such direct and practical importance that all who are engaged in the mining, transportation, storage or consumption of coal can study them with profit. It appears, from accurate tests of a number of samples before and after exposure, that all the valuable properties of the coal had deteriorated.

The coking quality of the weathered coal diminishes with its gas-yielding quality, the author informing us that a sample of coal yielding, when freshly mined, a firm coherent coke, after eleven days' exposure, yielded a coke of no coherence, and in all the samples tested the rule was absolute that the longer the coal had been exposed the greater was the inferiority in the quality of the coke it produced.

The gas-yielding quality decreased in one instance 45 per cent., and the heating power 47 per cent.; while the same sample under cover lost in the same time but 24 per cent. for gas purposes, and 12 per cent. for fuel. These experiments go far to explain the almost universal inferiority of the slack or waste coals in heating power when prepared for burning, even though some combustible material like pitch or tar is used in their cementation. It indicates too, the imperative necessity of keeping coals amply protected from the deteriorating action of the air and moisture by keeping them constantly dry and under cover.—*Journal Franklin Institute.*

TEMPERATURE OF LAVAS.—According to the investigations of Dr. Fuchs, of Heidelberg, it would appear from a study of the chemical processes which take place in lavas at the moment of eruption, and by the observation of the broken crystals in the lava, that the melted masses some time before the eruption must have had a higher temperature than at the moment of eruption.

Vitrified Marble.

A substance, known under this appellation has recently been brought out in England which promises to find its way into very large and varied use. The material itself results from the admixture, and melting together in a furnace, of equal parts of certain vitreous, and silicious substances in about equal proportions, to which are added at a suitable stage and in the requisite quantities, such coloring materials as will produce the desired effects, either as a plain body-color equally diffused throughout the mass, or in veins of one or more colors with or without ground. When in a semi-fluid state, while yet hot, small or large masses of this plastic matter are cut off and pressed into iron or steel moulds carefully formed to the desired shape. In this manner decorative objects of any size, shape, or appearance can be produced with the utmost facility and rapidity of execution.

The manner in which natural materials of all kinds can be imitatively reproduced is extraordinary; ordinary marbles, veined and other, porphyry and malachite, jade, lapis lazuli, etc., thus prepared closely resemble the genuine objects themselves, and have the advantage of being in forms that it could only be obtained out of the originals with great labor, waste, and cost. They can also be obtained and applied in bulk and solid masses, as for vases, paper-weights, inkstands, table tops, etc., or in minute portions, such as paterae and tesserae, or amorphous pieces for mosaic work in every variety, suitable for pavements, etc. For the latter purpose the vitrified paving possesses an important advantage over marble and encaustic tiles, in relation to the surface, which is rougher, and more safe and pleasant to tread upon, giving good foothold and equable wear, while lending itself to every pattern, regular or the reverse.

When to the above advantages are added the essential qualification of economy, whether from the point of view of first cost or of maintenance and repairs, it is thought that this material must eventually command a wide field of practical application and use, supply a great want, and establish for itself a high and permanent position among the appliances of building and construction.

BOILER EXPLOSIONS.—It appears from carefully compiled data that a large share of accidents which occur from boiler explosions are due mainly to bad construction of the boilers. The facts presented in American experience are also confirmed by the records of explosions which have taken place in Great Britain. Thus, of 297 explosions which occurred within a given time in that country, 120 were due to malconstruction of the boilers, 88 to defective condition of the boilers, 44 to the failure of the seams or rivets at the bottom of externally-fired boilers, 38 to overheating of the plates, 5 to excessive pressure of steam caused by interference with the safety-valve, and 2 to causes not distinctly made out. For every blow-up due to the neglect of the attendant, there were six chargeable to the carelessness or ignorance of the boiler-maker or boiler-owner.

It is thus quite evident that the causes which lead to most of these disasters are neither accidental nor mysterious, but are of the simplest character and easily preventible by common knowledge and common care, and it is about time that measures should be taken to enforce such precautions as are necessary to secure the public from the dangers which now continually threaten them in this connection.

DISAPPEARANCE OF A STAR.—A gentleman of this city announces the fact, through the *Alta*, that the star Mu Leonis, of the third magnitude has recently disappeared. This star was one of the cluster which forms the sickle, and was the third in the blade, reckoning from the handle. His attention was called to the star some two weeks since, when it was shining with its usual brilliancy, visible to the naked eye. He first observed its disappearance on the 26th ult., but thought it possible that some peculiar condition of the atmosphere rendered it invisible. However, upon making a close scrutiny he found that the star had actually disappeared. At nine o'clock in the evening the sickle may now be seen in San Francisco, at which time it will be found situated a little north of west, and at a distance from the zenith of about 40°.

Much interest will be felt to learn whether this reported disappearance is confirmed by Eastern observers, and also to hear what phenomena with regard to the same may have been observed with the larger and more powerful instruments in use at other localities.

ORIGIN OF COAL.—According to Prof. Wurtz, the formation of coal depends entirely upon the action of the iron which was dissolved in the waters of the coal period. The combinations of iron with which coal is always accompanied are pyrites, iron spar, and hydrated oxide. These were doubtless derived from the strata interjected between the coal beds. In this case the oxygenated water appeared to act upon the metallic sulphurets which were contained in the crystalline slates, from the destruction of which these coal strata were derived. Coal, consequently, is the normal result of the eremacans of organic substances in waters which contain sulphate of iron and free carbonic acid. An immense pressure upon the mass, while in a plastic condition, was also, without doubt, an additional element of importance.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

PASSENGER FARE BOX.—Carlton Newman, San Francisco, Cal., assignor to himself and Geo. P. Kimball and R. L. Ogden. This is an improvement in boxes for collecting fares on street cars and other vehicles carrying passengers. It consists firstly, in a novel arrangement of the first or receiving chamber, into which the money or fare is deposited for inspection; Secondly, in an improved arrangement of the lamp and reflector, so as to give the best possible light; Thirdly, in the employment of a perforated metal front for the upper chamber through which the fare can be inserted if desired. This front is arranged so that it may be lifted vertically in the frame of the box by a lever or other suitable device, so as to drop the fare into the next compartment; and lastly in the employment of an intermediate chamber of a novel and useful construction, into which the fare passes from the inspection chamber before entering the drawer or lower compartment.

This is an ingeniously constructed box which is burglar-proof, and for simplicity and convenience excels anything of the kind heretofore used in the Eastern States. It is now in use on some of the Howard street cars, in this city, as well as on the Oakland and Fruit Vale, San Jose and other lines, where it is said to give good satisfaction.

IMPROVEMENT IN WATERPROOFING OR PRESERVING FABRICS.—Sidney P. Cook, San Francisco, Cal. This invention relates to an improved process or composition for treating fabrics for the purpose of rendering them water-tight and proof against the effects of dampness, while it also preserves the fibre and qualities of the goods. It is more particularly applicable for treating canvas or other closely woven fabrics which are intended for the manufacture of hydraulic hose, such as are employed in connection with steam and other fire engines and like purposes. When used for this purpose it not only closes up the pores and interstices of the fabric with an indissoluble substance, but renders the employment of rubber coating for the hose of no particular use, shields the fabric from injury and makes it tough and unyielding.

STAMP AND HAMMERING MACHINE.—Geo. D. Crocker, Virginia City, Nevada. This invention is classed among stamping and hammering machines, such as are used for hammering metal, drugs, rock and other materials or substances, either for the purpose of forging or crushing them. The machine is a combination of the ordinary stamp and stem, such as are used in quartz mills for crushing ores, with a lever arm for operating them in the manner of operating an ordinary tilt or trip-hammer. The improvement consists in an attachment or joint for connecting the lever arm with the stamp-stem, by which sufficient freedom of motion is permitted to accommodate the movements of both, while the blow of the hammer or stamp will not affect it.

New and Curious Building Materials.

To make planks out of sawdust has hitherto been regarded as equally feasible with spinning ropes out of sand. However, the manufacture of planks out of sawdust is now unquestionably possible, though we do not say economical; still the operation by which this might be accomplished, slightly varied, yields products not only curious but economical, and some of them, we believe, are destined to find large application as building materials.

The chemical material lignine, or cellulose, (woody fibre) was regarded until quite recently as insoluble; but it has been discovered that the fluid "cupro ammonium" dissolves woody fibre with great facility. There is good reason for belief that materials built up by taking advantage of this curious solvent property of cupro ammonium will before long be turned to great practical use, by effecting, however, not complete, but partial solution. Thus, to take a simple case, a sheet of paper could be rendered waterproof by being dipped momentarily in cupro ammonium, then passed between rolls to squeeze out excess of moisture, and finally dried. Such paper might be made into a bag and filled with water, and would not allow any fluid to come through except through such apertures as all paper invariably possesses. Hence to treat a single thickness of paper for the sake of waterproofing it is of little use; but if two thicknesses be dipped momentarily in the bath and then passed face to face through rolls, the two surfaces adhere so absolutely that, after drying, the plane of juncture is invisible and cannot be rendered visible by dissection.

Moreover as the chances against the exact correspondence of two apertures in the two opposite sheets are almost infinite, a waterproof bag could be made.

What can be effected on two sheets can be effected on any number, and thus artificial lignine sheets may be built up of any thickness, from that of paper to that of plank or scantling if desired. The material, when in a certain state of moisture, molds with almost the same facility as potter's clay. It readily corrugates, either by fluted rolling or by rectangular pressure, and the corrugated material, extremely light, hard and almost indestructible chemically, is destined, we believe, to supplant corrugated iron in numerous applications of the latter. Water has no effect on it, and acids but little; in fact, the only agent which they cannot stand is ammonia.

It is a noteworthy fact that although cupro ammonium rapidly dissolves lignine, yet the first result of immersion is a strengthening of the fibre. A piece of linen, for instance, after being dipped for an instant in the fluid, has a greater cohesive force than it had before. This result appears to be due to a contraction of the tissue by the chemical action, and, suggests comparison with the curious accession of strength imparted to paper by instantaneous dipping in concentrated sulphuric acid, although a more prolonged immersion destroys the same paper.

Fabrics of great tensile and cohesive strength may be prepared by alternating canvas with paper or canvas with canvas. Thickness for thickness, we do not think that any timber can equal the strength of these compound fabrics. For building purposes there are numerous applications. For roofing the very thinnest double tissue paper would be both water and wind-tight, and nothing would be gained by using thicker material, except for providing against the casualty of snow and other extraneous weight. We have, however, seen a specimen made of six thicknesses of common brown paper and corrugated, which seems stout, strong and reliable enough to be proof against all ordinary casualties. As regards ornamentation, the natural tint of some of these cupro ammonium lignine structures is very elegant, and they readily take any sort of paint.

Many other utilities will suggest themselves. Among these the manufacture of tubing is important. Possibly the material may be turned to good account in hat-making—probably in boot making. We have even seen a waterproof paper cape, the only obvious defect of which was a trifle too much of rigidity.—*Condensed from Engineer.*

THE ASTEROIDS.—The recent announcement by Dr. R. Luther, of Europe, of the discovery of another asteroid (the 118th) in connection with the reported disappearance of a fixed star, reminds us of the fact that quite a number of the smaller asteroids have taken themselves out of telescopic ken, and it is still uncertain whether they are coming back. In view of these disappearances, Professor Peters, of Hamilton College is opposed to putting any more on the list until observation has made it certain that they have "come to stay." Our older readers will remember that in their school days there were only four asteroids known to the text-books—Ceres, Pallas, Juno and Vesta, discovered respectively in 1801, 1802, 1804 and 1807. It was not till 1845 that a fifth was added to the list by Hencke, of Dresden. The number had slowly increased to 29, when American science took a hand in the person of Professor Fergusson, of Washington, who added Euphrosine in 1854. Of the total 118, 61 have been discovered since 1859. Those first seen and named in this country number, we believe, 28. The best years for asteroids have been 1857, 1861 and 1868. In the first, 8 were added to the list; in the second 10; and, in '68, the unprecedented number of 12.

COAL CUTTING MACHINERY.—There is now every prospect that the getting of coal by machinery will be more generally adopted in the British mines, than has hitherto been the case. At present it has only been adopted at a few places, but a new machine, patented by Messrs. Gillott & Copley, has recently been tested near Barnsley, in the presence of a number of mining engineers from various parts of the kingdom, and with the most satisfactory results. In 136 minutes a bank of coal, 58 yards long and four feet eight inches thick, was cut to a depth of three feet one inch. The quantity of coal so cut would be about 80 tons in the time stated. It brings down the coal in vast blocks, effecting a great saving by making little or no slack, as wedges and gunpowder make from 25 to 40 per cent. The owners of the Oaks Colliery are so satisfied with the machine that they have given orders for four of them.

CARBURETTED AIR IN THE IRON MANUFACTURE.—It is stated in the *Journal of the Franklin Institute*, that in certain smelting establishments in Europe, the experiment is being tried, and with success, of using air carburized by its passage over petroleum, in the reduction of iron from its ores.

FARMERS IN COUNCIL.

Oakland Farming, H. and I. Club.

The fourth and largest meeting yet convened of this Club met on Friday evening of last week in the Chemical Lecture room of the University, Prof. E. S. Carr presiding.

The President announced for the benefit of strangers, that the initiation fee was \$1, and the annual dues \$1.

Wm. E. Little was unanimously elected a member.

Prof. Carr's Lecture on Water.

Mr. Dewey suggested that Prof. Carr lead off with his lecture upon "Water," and let the discussion upon irrigation follow, in which suggestion all concurred.

The lecture was one of marked interest, and we defer our report of it until next week, in order to give more of the valuable information it embraced than our present space will allow. The Doctor's happy style of lecturing is so plain that all can easily comprehend his illustrations. An increased interest seems manifest in hearing him by the Club and his other hearers. The subject for discussion for the evening was

Tree Irrigation.

Mr. Dwinelle said he had expressed himself at the previous meeting of the Club as opposed to the irrigation of fruit trees. He had hoped that Mr. Hutchison would be present and give his views upon the subject. Since the last meeting he had met that gentleman and conversed with him upon the topic. Mr. Hutchison told him he preferred, in setting out young trees, to have those that had been irrigated, as in such cases, horizontal roots were thrown out near the surface and they thrived better.

Fruit Trees Not to be Watered.

Mr. Webster, of Fruit Vale, said his experience in irrigating had been limited, as our low land in the valley was of a moist nature. He had come to the conclusion that the advisability of irrigation depended altogether on the age and class of the tree. He had noticed that the Australian gum tree, by two or three years irrigation, the tree obtained a great advantage. But with fruit trees, after they had begun to bear, irrigation injured them. Especially so with cherry trees. A friend of his at San Lorenzo tried irrigation with his cherry trees, and he not only had no crop but his trees were injured. Mr. Rhoda not satisfied with this experiment at San Lorenzo, made a circle around some trees and poured water into the trench around them. This was just before the cherries began to turn color. The result was a total failure of the crop, and the trees had since begun to decay.

The Sycamore Trees.

Dr. A. Kellogg, of San Francisco, said he had noticed, in a trip through the valley, a phenomena connected with the sycamore trees. They presented an appearance of lifelessness as though blasted by fire. It seemed attributable to a want of water. The natural habit of the sycamore is to grow along water-courses, and in that respect the cherry tree is similar. In the Eastern States, the cherry tree is scattered everywhere, but in hotter climates and in California, they are now confined to alluvial soil. He believed the phenomena he had noticed was attributable to some general cause. They had had several years of drought. The dry weather had not penetrated deep enough to reach the roots. Most horticulturists are familiar with methods of keeping plants back to a certain date. The same cause, perhaps, working in nature, had operated with the sycamores. It seemed as though nature had forced forward an undue development, and the result was they were checked back, and many of them killed. In some parts of Europe horticulturists pour boiling water on their camelias. By doing this for several days, they are able to produce camelias almost to order. This fact regarding forced irrigation is worthy the attention of horticulturists.

The Doctor assured the club that he was ignorant practically of the subject, and he had attended the meeting, not to speak upon it, but to hear from some of the members who are horticulturists.

Chinese Method of Irrigation

Dropping the subject of sycamores, the Doctor said he had observed that the Chinese have a method of irrigation that might be called the spray method. They have also a peculiar method of raising radishes. The Chinese radish is some ten inches long. A remarkable fact is that although they grow to a weight of twelve and fifteen pounds, there is no pith in them, as in our radishes. Of course, a great deal depends on the kind of seed, but much more on the culture. He had observed that they plant about eighteen inches apart and ten in a row. Instead of pouring the water on the rows, they fill in between the rows with manure and pour the water on the ridge of the manure. By this means, the soluble salts in the manure are washed down to the roots.

Mr. C. Bagge said he had been instructed, in planting cherry trees, to put them in dry soil; they died. He has transplanted two sycamore trees from his ranch to his place in Oakland, and they now looked as though they had been burned. He had thought it resulted from the frost.

Slow Irrigation.

Mrs. Carr said the magnolia rose required a

slow and constant irrigation. Mr. Magill, of Alameda, had tried the experiment of placing a stoue crock with a small hole in the bottom so that water would drain slowly to the roots of the plant. The result was, it had doubled its growth. Mrs. Graham had also tried this experiment, with the same favorable result.

Temperature in Irrigation.

Prof. Carr said he had no doubt that many of the difficulties which arose came in part from the mode of watering and the temperature of the water. If the water used was of the same temperature as the soil, the advantage, it secured to him, would be greater.

Checking Trees.

Dr. Kellogg asked if any of the horticulturists present could give any information concerning checking trees. In the Eastern States snow is banked up around trees in the winter to keep them back in the spring. In the northern part of California some pomologists put cold water on their trees to keep them back.

Quantity.

Mrs. Carr inquired whether it had been the experience of any member that a free use of water deteriorated the quality of the fruit, and instanced a place in which a stream flowed, where certain kinds of fruit, strawberries especially, grew very large and fine.

A gentleman noted an instance where a gardener had used more water than had the gardeners who was employed the previous year. The last year, the fruit had not the same flavor; it lacked sweetness. The blackberries on tule lands are very sweet and fine-looking, and they grow almost in water.

Dr. Kellogg said, in that case, it would seem to be the habit of the plant.

Mr. Bagge said the blackberry referred to must be a different kind from the ordinary blackberry.

The gentleman who had first spoken, said they were the ordinary kind that are found in the woods of California.

Prof. Carr then called upon Mr. Hunt, who was present, for his experience on irrigation. That gentleman's place had not been subject to any irrigation; the soil has a great deal of adobe in it.

Mr. Bagge said Mr. Hunt's place had been irrigated by its former owner some six or eight years ago.

The Sycamores Again.

Prof. Carr referred to an editorial article in a recent number of the San Francisco Evening Bulletin, about the condition of the sycamore trees in Alameda county. The explanation given by Dr. Kellogg seemed rational. He would like to hear from others upon the subject.

A gentleman in the audience said he could account for the sycamores. A heavy hailstorm in the early part of last winter had stripped the trees of their leaves, but fresh leaves were now coming out again.

Sudden Changes Detrimental.

Mr. Dewey said his attention had been called to the fruit trees in the vicinity of Berkeley. The blossoms appeared to be of a late or second growth. There were acres of them affected and some seemed likely to die.

Mr. Webster had observed the same thing at Fruit Vale. It is, he said, the same with vegetables and with animals. Plants can adapt themselves to almost any circumstances, but sudden changes kill them. He had noticed when the trees had died that they were in low damp places. Trees that he had set out in holes dug in earth of a clayey formation, which held water, had all died. They had in a measure adapted themselves to the previous drought, and the sudden change of a wet winter killed them. If they had had a continual succession of wet winters, they would not have suffered.

Mr. Dewey said that Mr. Hoag, who had spoken to him about the fruit trees at Berkeley, had observed elsewhere, a tree which had been overturned. The tap root had been rotted off and new roots started out.

Mr. Webster thought that was an indication of too much dampness below.

Roots Want Room.

Dr. Kellogg referred to certain places in the East, where the soil was shallow and had a clay stratum beneath. The trees there were often blown down by wind. When the farmers found out that the soil was shallow they cut down through the clay so as to allow the roots to run down. Where this was done, the trees were not affected by the winds.

Mr. Bagge said we needed to drain our lands so as to have them alike in all seasons.

Rust in Grain.

Mr. Bagge said that the wheat in some parts of the county is affected with rust. Many farmers had already cut some grain for hay. If the rest can be saved, they would like to leave it. It was now just the time to bring up the subject of rust in wheat, and he moved that the subject be discussed at the next meeting. Carried.

New Members.

The Secretary read the following names, which had been handed in for membership during the evening, and they were at once acted upon, and the candidates elected: Mrs. Dr. E. S. Carr, Mrs. A. D. Merrill, Mrs. Emily Bagge, Mr. F. E. Weston, and Mr. Sherman Day, all of Oakland.

Chinese Seed.

Mr. Day asked Dr. Kellogg if he could inform him where Chinese seed could be procured. He had been on a boat expedition and while

away was given some Chinese vegetables to eat which was very sweet and furnished a very desirable dish.

Dr. Kellogg did not know where to get the seed. To procure any, he would have to use considerable finesse. Some parties would charge \$15 a pound for what was not worth more than \$1.50. From Mr. Day's description of the vegetable referred to he presumed it was kale. It was a valuable vegetable, but he doubted if we in California knew how to treat its culture properly. If not cultivated rightly, it runs to seed. It requires high culture.

The Chair here appointed Mr. Webster, of Fruit Vale, to prepare an essay for the next meeting, and the Club adjourned.

The regular meetings of the Club are held on the evenings of the second and fourth Fridays of each month.

Most of this report appeared in the Oakland Daily News, a journal whose proprietors manifested a live interest in the industrial welfare of their own community by having a special reporter, Mr. Harlow, to attend the meetings of the Club.

San Joaquin Farmers' Club.

At the meeting of the San Joaquin Farmers' Club, Saturday, May 25th, the President, on behalf of the Committee on Insurance of Growing Crops, reported that the various insurance companies were not willing to venture in the business, and consequently declined to issue policies upon growing crops at such rates as would be acceptable to parties desiring to insure.

Mr. Fairchild, on behalf of the Committee on Damage to Crops, asked further time, which was granted.

Threshing Machines.

Mr. Fairchild, of the Committee on Threshers, said he had not seen the other members of the committee to consult with them in regard to the business upon which they had been requested to report.

Mr. Smyth said the Vibrator was the only machine that had been offered for trial. He believed it to be the best machine ever brought to the State. The manufacturer of this machine was the only person who had expressed a willingness to enter into the proposed trial for the purpose of thoroughly testing the respective merits of the various machines in use. If no other party came forward, he suggested that the Vibrator be tried alone and pronounced the best in the county until one was found to surpass it.

Mr. Fairchild coincided with Mr. Smyth, and spoke approvingly of the Vibrator, from what he had seen of its work. He thought the Club should favor the Vibrator, on account of the fact that the manufacturer had been so ready in expressing a willingness to have it tested, and also because the machine was laid down here by the manufacturer at cost prices.

Mr. Overhiser thought there was no use in offering a premium. The owner of the Vibrator had to test his machine free of cost, and if no others should offer to compete, the farmers would reasonably take it as an admission that they had little hope of making a favorable showing.

Kollberg said the committee had offered every inducement to the owners of other machines to bring them forward, but thus far without avail.

Overhiser suggested that a little more time be given for them to come forward. The grain, he said, is not ready yet, and let us not run down other machines without giving all a full and fair opportunity to bring them forward for a thorough and impartial trial.

Captain Ketchum desired to know if any of the parties owning machines in San Francisco, and who had been invited to take part in the proposed trial, had responded.

The Secretary *pro tem.*, replied that no responses had been received.

Hitchcock said, if there was any way possible of getting up a contest he would like to see it.

Fairchild said the only way was to pull the other parties out. The farmers should make it understood that they would only purchase the best machines, and in order to ascertain the best they must see them tried.

Overhiser said he would purchase a machine this year, and he would purchase a Vibrator unless some other machine was exhibited and proved superior.

Other members came to the same conclusion.

Mr. Hitchcock moved to amend Mr. Smyth's resolution by adding the words: "And that this opinion shall remain unchanged until other machines shall satisfy us to the contrary by a contest." The amendment was accepted and the resolution adopted.

The Question of Taxation

Was called up, and Mr. Hitchcock, the Chairman of the Committee, said that as yet the committee could not act, and therefore had nothing to report. The committee could not act until after the 1st of July, when the tax-roll would be completed. He suggested that the same committee be authorized to act on equality in valuation of property—to see that property was equally taxed. Mr. Fairchild said he could not see for the life of him how the farmers could do anything. The officials had the whole trick, and would draw from the top, middle or bottom of the pack as they pleased. Hitchcock said he wanted it to be perfectly understood that he had no reflections upon the County Assessor, who was acting under instructions from the State Board of Equalization, and who, in his estimation was an honest man. Mr. Smyth said that his land was taxed for \$20 an acre which was the total worth of improvements and all; yet he was taxed for his improvements and crops separately, and would pay his tax under

protest. He said that he intended to test the matter in the Supreme Court. The question of the day, namely,

"The Best Header."

Was taken up. Mr. Overhiser remarked that he wanted to buy and desired information. Mr. Fairchild said the best way to fine out was to take the header to the field and try it. Mr. Overhiser said if there were any single-gear men present, he would like to hear from them. [Laughter]. Mr. Hitchcock said he never used any but the Haines double-gear, the best header in use. He said that a man could not harvest his (Hitchcock's) crop with a twenty foot header if he should do the work for nothing. He preferred a ten-foot header, and was certain that he could gather as much as five bushels per acre more grain with a header of that size than could be done with a larger one. He believed that by using a twenty-foot machine, enough grain would be wasted, particularly on uneven ground, to pay for the entire labor of harvesting. Mr. Dunham said he liked the old Haines header the best. He had both a single and double geared machine, and found the single to run much more easily than the other. It did excellent work. Mr. Sperry did not want anything less than an eighteen-foot machine, and he said by the use of an eighteen-foot header he could save at least 25 per cent. in cutting a crop. Mr. Wolf asked Mr. Dunham to explain the difference in the working of the single and double-gear machine, which the latter gentleman proceeded to do in a very clear and satisfactory manner. Hitchcock claimed that he could cut higher and lower with a Haines, than any other. He gave a detailed explanation of the workings of both double and single-gear machines, and argued at length to show the superiority of the double-gear over the other. Mr. Dunham also went into minute details at some length. Mr. Cowles related, at some length, his experience in running a Haines header. He preferred the wide cutters and single-gear. Mr. Sperry stated to the Club that he thought he had found a new header, which, he believed, is as far ahead of those in general use as he believed the "Vibrator" to be superior to all other threshers. The header he had reference to was manufactured by Mr. Richards, at Magge's old shop in this city. Sperry introduced Richards, who stated that he would have one of his machines ready for exhibition next Saturday. He explained what he considered lacking in the machines in general use, and said that he believed he had a machine free from these objections.

The Vibrator Again.

At the request of Mr. Overhiser, Mr. Nichols, one of the manufacturers of the "Vibrator" who had been introduced to the club, proceeded to explain, in a very explicit and interesting manner, and the members of the club seemed greatly pleased with the explanation. Mr. Hitchcock explained, to the apparent satisfaction of the club, his manner of feeding the Vibrator. Mr. Wolf explained how he got rid of his prejudice against this machine. The prejudice was removed completely by the very excellent manner in which the Vibrator accomplished its work. Mr. Wright was not satisfied that the Vibrator was the best machine in the country. He thought the only way, however, to determine the matter of superiority satisfactorily, was to test them.

While some discussion was going on between Messrs. Dunham and Wright in relation to testing threshing machines Mr. Smyth was called to the chair. Mr. Nichols stated that he was willing to extend every facility in his power to the Club in their efforts to test machines, and said he would pay the expenses of his own machine. He also promised to exhibit a portable steam engine (new model) in this city shortly. After some further conversation of a general nature, Mr. Wright moved that the subject for discussion at the next meeting, on Saturday, June 1st, be: "The best manner of harvesting our grain." The motion was carried, and the club, on motion, adjourned.

Contra Costa Farmers' Club.

Regular Meeting. President Nathaniel Jones in the Chair.

In the absence of the Recording Secretary, Mr. Miller, Wm. L. Huston was appointed Secretary *pro tem.*

The minutes of the previous meeting were read and approved.

Mr. A. W. Hammitt, not being present at the last meeting, expressed his views in regard to the best mode of harvesting grain. He thought that heading the grain was the cheapest, and advanced his belief, that grain could be put in the sack for one-half of what it cost ordinarily, if farmers would cooperate in heading and threshing at the same time.

Mr. Howard said that as far as his experience went in the matter, he preferred the header as a harvester.

The subject of "The most economical mode of conducting a farm," came up.

Mr. Huston thought that unless the small farmers made some change in their mode of conducting farms they would soon be at the mercy of the large tract farmers, and the sooner they were made to realize this fact the better. He thought they ought to fence their farms and have small lots of ten to twenty acres, and keep a variety of stock, a few sheep, cows, hogs, poultry, etc., and in that way always have something to dispose of when ready money was needed.

Mr. Howard said he kept on hand about

(Continued on page 361).

AGRICULTURAL NOTES.

ALAMEDA COUNTY.

FEEDING THE EAST.—The New York Shipping List of May 15th, mentions the arrival of 1,000 sacks of California flour overland, the first received from this State in two years. It was sold at \$12 per barrel.

IRRIGATION.—The subject of irrigation will be discussed by the Farming, Horticultural and Industrial Club next Friday evening. The Club meets in the chemical lecture rooms of the University, and the meetings are free.

AMADOR.

Ledger, June 1: HAY MAKING.—On every hand one can see the fields spotted with men cutting and gathering the new hay. The report comes to us that the crop of hay this year, on our mountain sides, will be far superior to that of last year, both in quantity and quality. The wheat and barley fields promise exceedingly well, and looks very fine. In many localities the grain has reached a greater height and is filling to better advantage than was anticipated by our farmers.

We regret to learn that the peach crop in the neighborhood will be almost a total failure, but all other fruits will be abundant. The grape crop looks remarkably well, and is now so far advanced that no casualty is likely to prevent an abundant yield. Altogether the present and future prospects of the brave old town and its surroundings are cheerful and flattering.

BUTTE.

FINE GRAIN.—*Appeal*, May 31: Yesterday, at Bull & Garrett's store, we saw some samples of fine grain from Sutter county ranches. One sample of wheat, from the ranch of J. Humphreys, some ten miles from Yuba City, down the river, looked remarkably well. Mr. Humphreys will commence heading on Monday next. He has some three hundred acres of this kind of grain. Another sample of wheat, from the ranch of Chris. Smith. (Hook Farm) also indicates a good yield. The heads are long and the berry well set.

WOOL.—Yesterday L. P. Crane, of North Butte, brought in his wool clip, or a portion of it, consisting of about 5,400 lbs. He represents the clip in his section as having been mostly disposed of. From him we learn that harvesting will commence in his section next week. The average of the grain looks well, and will yield a good harvest.

CALAVERAS.

Chronicle, May 25: **HAYING.**—Ranchers in this vicinity are now engaged in cutting their hay. On an average a fair crop will be harvested in this locality. The weather during the past few days has been unfavorable—cloudy and cold. As a general thing we believe farmers prefer to make hay when the sun shines.

Calaveras Chronicle, June 1st: GOOD CROP.—While crops throughout the county are not nearly as good as they were last year, Mr. John Donnellan, of the Bay State ranch, informs us that he is harvesting as large a yield as during any previous season. We have frequently referred to Mr. Donnellan's method of farming and repeatedly urged ranchers to adopt it. One thing is certain, Mr. Donnellan harvests a good crop every year, without reference to the season, while others fail. He is either especially protected from drouth and flood, or else his system of cultivation is superior to that usually employed. The secret of his success is simply this: summer fallowing, deep plowing and early seeding. When other farmers adopt the same plan they, like Mr. Donnellan, will raise good crops, make money and be happy.

The weather is abominable—sweltering in linen one day and freezing in woolen the next. As variable as the caprices of an old maid and as changeable as the hnes of the Dolly Vardeu. Regular rheumatic regenerator.

COLUSA.

Chico Review, May 30: "From G. W. Colby of Nord we learn that the crops in Colusa county look on an average at least fifty per cent. better than the crops in Butte. Colby last week rode about sixty miles through Colusa county, going down over the 'plains' and returning by the river, and had a fine opportunity of observing the crops. He says that all the early sown grain looks as good as grain can look, all over the plains, and all the farmers are jubilant at the prospect. Returning by the river road, he says he never witnessed such growth. John Boggs has a field of 300 acres which is all up higher than the five board-fence which encloses it, fully headed out, and will yield at least fifty bushels to the acre. Boggs has two

other fields, one of 700 acres and the other of 800 acres, which also look fine, and will yield over forty bushels to the acre, beside a large amount of barley. Colby thinks that Colusa county will be the banner county in the State this season for wheat."

EL DORADO.

Republican, May 30: **CHEERIES.**—On Saturday last Messrs. Collins & Marks presented us with several pounds of ripe cherries, grown in Coloma, this county. They have been selling them at 25 cents per pound, while in San Francisco they are quoted from 50 to 60. Messrs. Collins are deserving of credit for their effort to keep this market supplied with all the delicacies at reasonable rates. Their receipts of strawberries, raised in this vicinity, now amount to several hundred boxes daily.

LOS ANGELES.

Californian, May 23: **RAMIE PLANTING.**—Mr. J. S. Finch, an experienced ramie planter, arrived here last Saturday night. He brought with him 32,000 ramie plants, and is now engaged in planting. He had already secured a piece of ground on the Cotton Ranch which had been prepared and put in excellent order for receiving the plants. The place is well chosen and the soil admirably adapted to the purpose. The plants are already in the ground, although he has been here but a few days, and this expedition stamps him as a man of energy and capacity, evidently well fitted to conduct and develop an important enterprise. Mr. F. expects his plants to show themselves above ground in about ten or twelve days.

News, May 25: Mr. Peck, of El Monte, reports his wheat to have rusted. That vicinity has been visited nightly with dry fogs since the 19th inst., the mercury being at 58 degrees. The rust made its appearance on the night of the 20th. It has been generally supposed that the rusting of wheat is attributable to the visitation of damp fogs, but Mr. Peck is led to believe from the low state of the temperature at the time that his wheat rusted, that it is chiefly owing to excessive cold. The theory is a nut for scientists to crack, and as such we submit it to their consideration.

MONTEREY.

Argus, June 1: **HAYING.**—The farmers in this vicinity are busy securing their hay crop, which must be large, judging from the great number of mowers that have passed through town during the past ten days.

NAPA.

Register June 1: **HAYING.**—Everybody is busy with the hay harvest; consequently our streets present a deserted appearance. The hay crop in this valley is unusually short, but there will be enough for home consumption and a few thousand bales to spare.

THE WEATHER, this week, has been changeable, and in the main very disagreeable. The first three days of the week, were decidedly hot, succeeded by very cool high winds and indications of rain.

SANTA BARBARA.

Press, May 25: **THE WHEAT CROP.**—Our State papers unite in saying that the wheat crop for the present year has been over estimated. Farmers will consult their own interests by allowing their grain to mature, instead of cutting it for hay. Wheat is likely to bring a good price which cannot be said of hay. We are deeply impressed with this fact and feel a yearning to write an editorial about it. But want of space forbids, which is exceedingly fortunate for our readers.

SANTA CLARA.

FINE STOCK.—*Gilroy Advocate*, June 1, says Robert Blacow, of Centerville, Alameda County, was in Gilroy, this week for the purpose of delivering to Mr. Balada of the Santa Ana ranch in Monterey county, 20 head of his improved French Merino lambs. The price paid was \$150 per head. Mr. Blacow is the most thorough stock raiser in California having made it a life study. He commenced the improvement of this breed of sheep and the Durham cattle in 1853, and has succeeded in bringing it to such perfection that it is now generally conceded by judges that he has the purest blood in California, or perhaps in the world. When full grown, his sheep will average to the fleece 27½ pounds, the texture being of the finest quality. His stock have invariably taken the first prizes at our State fairs when entered and are sought for by every stockman in the State who is anxious to improve the breed. The great drawback with the majority of the stock raisers of California, is the little attention they pay to its improvement. There is as little trouble with fine as poor stock, while the fine quality returns quad-

ruple the profits of the poor quality. Mr. Blacow is entitled to great credit for the revolution his study and judgment has created in this branch of our State industry. His name will be handed down as one of the great stock improvers of the world.

FINE GRAIN.—Ex-Councilman Isaac of this city, informed us this week that the wheat on his ranch on the south bank of the Pajaro, measures 6½ feet, with well filled heads, the barley 5½ feet; he says it is not a rare thing to find barley heads containing 90 large plump grains.

SISKIYOU.

Yreka Union, May 25: **FOR ELK VALLEY.**—Ben Stewart will start in a few days—we think he'll get off in a few days—with 3,000 head of sheep for Elk Valley. Elk Valley is somewhere along the eastern base of Mount Shasta, and furnishes excellent summer range for sheep. It will be necessary, however, to drive them back again in the fall, as no domestic animals could survive the snows which visit that elevated region during the winter season.

SAN JOAQUIN.

Republican, June 1: **LATE SOWN GRAIN.** Last evening Mr. Sperry showed specimens of wheat sown on the fifteenth of March. The head is long and well filled and the grain in the milk. Mr. Sperry says if the weather holds cool a few days longer, the late sown grain will make a better crop than that put in the ground before any rain fell.

CHEAP.—Red currants of a fine variety are selling in our markets at ten cent per pound by the box.

Independent, June 1: Three weeks ago fears were entertained that the wheat crop would fall short of earlier expectations in many parts of San Joaquin Valley; but happily for the general business interests of the State, and more particularly for the individual interest of every farmer, an abundant yield is promised. The weather lately has been peculiarly favorable for the cereal crops. Large tracts of wheat on the west side of the San Joaquin river, which were in a measure given up as lost a month ago, have now a fine appearance, and will average a yield of from fifteen to twenty bushels to the acre.

SAN LUIS OBISPO.

Tribune, May 25: The weather during the past week has been mild and pleasant. Summer has touched us lightly so far, and has not seared us as yet with the scorch of extreme heat. The crops are coming along finely. The mowers are busily at work, and will harvest more hay this season than ever before. Agriculture commences to look up in our county, and will soon take the lead in the resources of our highly favored region. When the balance is struck between the counties, as regards the profit and loss of the present year, San Luis Obispo will be found to be behind no other in the State, in proportion to the amount of capital invested, and the number of persons employed, in the advantages derived from that particular industry which feeds and supports all others.

STANISLAUS.

News, May 31: **THE CROPS.**—From close observers and competent judges, we learn that throughout the central portion of our valley, where the soil is generally of a light or sandy nature, the crops have generally improved. In fact none of the fields, even the very latest sown, will fail to go considerably above a half crop. The greater portion of the early grain is far above an average crop, many fields, even on the sand plains of the Paradise valley, are expected to yield from 20 to 40 bushels to the acre. The only complaint we now have is that there is much more smut among the wheat than was ever before known in this county; but take the whole, including the four divisions of our county, and we are now certain that the average yield per acre will exceed that of 1869. We are also more positive now than ever, that the area sown to grain, is fully greater by one-third than it was then.

TEHAMA.

Independent: **WOOL.**—The most of the wool growers of this county are about through shearing. We have been unable to get the exact number of pounds clipped this spring, but from the best information we can gather it is over a million pounds. The sheep do not shear as heavy as expected, but the wool is the finest ever clipped in this county, being almost as free from dirt as washed wool. The prices paid average from forty to fifty cents. A few may have sold at private figures a little in advance of the last named, but the most are under it. We think it will average about forty-eight and a half. This will bring about half a million dollars into the county from this crop alone.

TULARE.

Delta, May 30: **MOVEMENT OF STOCK.**—There is quite a general gathering of stock in this county, for the purpose of being driven out of the State. In the settlement on the Kaweah river, to the east of us, we hear of Frank Burns, George Sheppard,

James and Lud. Bacon, Marrill Jasper and others having prepared to leave or leaving, each with large bands. We hear of one man, however, who, after gathering to the number of several thousand, not only turned them loose, but gave a San Joaquin grower the right to put three or four thousand head of stock on his range. One would think this would soon cut down the feed on an outside range of one thousand acres.

YOLO.

Vallejo Chronicle, June 1: **CROPS IN YOLO COUNTY.**—Wm. Moore, of Vallejo, last week visited Yolo county, and took several days to pass around through that section, from Woodland west some fifteen or twenty miles to the foothills, and thence to Knights landing. He reports the whole country one vast grain field, the early wheat, of which an immense breadth was sown, standing five feet high on an average. He brought us a bunch of fine stately heads, the straw of which is five feet in length, showing a strong and vigorous growth. He estimates a yield of from forty to sixty bushels to the acre, in a belt of country containing about 200 square miles of land, or an aggregate of 750,000 bushels.

NEVADA.

Republican June 1: **A LARGE** amount of the beef consumed in California for a year or more past has come from the State of Nevada. The drain from that quarter has been so excessive that that State has sold short to supply the California market, and now there is a demand from the sagebrush region for a return of its beef, and the high prices ruling there are "floating" cattle back again. A gentleman from the Walker River country in the State of Nevada informs us that all the cattle fit for beef in that region have been sent to this State, and now they are wanted back again. In trying to supply California with beef, the Silver State has overdone the thing, and robbed herself.

QUAILS DROWNED.—The number of quails in the mountains is said to be unprecedented. A gentleman who was fishing on Donner Lake yesterday informs us that large numbers of quails in attempting to fly across the lake fall into the water and are drowned. The distance over the lake is greater than they apprehend, and they are unable to make the journey on the wing.

OREGON.

Statesman: "The caterpillars are carrying all before them in Polk county and soon the orchards will be one scene of devastation, stripped of every green thing, and black and wriggling with these insatiable plunders. They cover the rose bushes, are thick upon the fences, and can be seen crossing the roads in endless trains that stretch from orchard to orchard. What can be done to stay their ruthless march?"

Give them a dose of kerosene oil, and they will soon be ended in their ruthless march. It is a dead shot. We know a lady who used over twenty gallons last year, and her orchard is entirely clear of the pests this year, and saved her fruit crop last year.

Mountaineer: From Mr. B. D. Bnttler who has recently returned from his sheep ranch in the Klickitat valley, we learn that his band of Angora goats are doing exceedingly well. The Klickitat seems to be expressly adapted to those animals. He has a band of sixty head all well and in good condition. This Spring's kids appear to be much larger and the fleece finer than the kids which were brought up from California last Spring. In course of time we have no doubt but that the Angora or Cashmere goat will become a profitable investment in this region of the country. We have a specimen of the wool on exhibition in our office that is over twelve inches long and as fine as silk, taken from the back of Mr. Butler's full blooded buck this spring.

WASHINGTON.

North Western Home, May 15: **THE CROPS.**—We have had occasion to visit several parts of the county since our last issue, and find the crops everywhere looking well. The cool, showery weather we have had for a month past, has given the wheat an opportunity to take deep root. The winter wheat is beyond the possibility of failure; and with occasional showers for the next month, we shall have a large yield.

At the last meeting of the Agricultural Society held in this place, it was

Resolved, That a walk of Congress the donation of at least one section of land in this county for the benefit of the Society. As Territories were not included in the grant of lands for Agricultural Colleges, we think we are entitled to this small donation.

Qualities Desirable for Breeding.

In presenting my opinions on theories and rules of breeding, or the relative merits of the various breeds or families of horses for trotting purposes, I hope to be governed by anatomical and physiological principles, and facts established by performance, and not by any prejudice against any horse or class of horses that private interest might dictate. The importance of "breeding up" is urged by all horsemen who are posted in the literature of horse breeding, or who have paid for their experience by breeding, either the running or trotting horse. Breeding up is infusing into the common horse strains of blood from direct descendants of the Arabian or Bard horse. While judicious crossing of recognized blood horses, has undoubtedly improved, if not the blood itself, certainly the fitness, form and make-up of the horse, for hunting, military and racing purposes.

In breeding up for blood, perhaps it makes no difference whether the cross is obtained from sire or dam, but in breeding up in size, we are subject to a fact in regard to size, and a law of physiology of which we cannot afford to lose sight. It is well known that the thoroughbred horse is medium in size, varying from 14 to 16 hands, and in weight in high flesh from eight to twelve hundred pounds. In his native form he is what we term "under size," or varying from 13 to 15 hands, and in weight from seven to nine hundred pounds, but by judicious crossing has been brought up to average from 15 to 16 hands, and to weigh, in high flesh, from eight to twelve hundred pounds, at the same time it has been found that he has retained a good degree of compactness.

It must be generally recognized that the thoroughbred horse is too light for farm purposes; that he has too high a mettle and a superabundance of activity for either farm, carriage, or road purposes, and that greater care is necessary in their breaking and handling to render them safe and serviceable than is practicable in most cases to bestow upon them. On the other hand, the majority of our Western and native well-bred mares vary in size from 15 to 17 hands, and in weight from ten to fourteen hundred pounds, and while they are cleverly serviceable for heavy draft and common farm purposes, they in most cases lack spirit and that activity that renders the horse desirable for carriage, road, or trotting purposes.

What is it reasonable to expect from the cold-blooded and thoroughbred cross? Exactly this: That what has been taken from the mare in size, has been given to the offspring in compactness, mental quality and activity. On the other hand, what the blooded horse has lost in activity and spirit, has been diffused through greater space, and lost correspondingly in intensity of spirit and action. But the desired end so far as contemplated, has been attained, namely: medium size and controllable action. But what will be the result in attempting to breed up from the small, but cold-blooded horse? Simply this: The progeny will have gained little or nothing in quality, but will have suffered by greater diffusing, hence they will be comparatively weak in bone, flabby in muscle and spiritless.

I now invite those interested to consider another fact in breeding. The market value of a horse depends upon his form and beauty of carriage, relative strength as compared with size, a positive color, his intelligence and kindness of disposition, and above all, his pure, open, free trotting action, which would be likely to carry him, with but little handling, a three minute gait. Such a horse would as readily sell for four hundred dollars as one without such a prospective would for two hundred. It is a well admitted fact that the first or direct cross for a thoroughbred horse to an indifferent trotting mare, is far less likely to produce a trotting colt than a like cross from a pure-bred trotting stallion. What I mean by a pure-bred trotting horse is, one that has for several generations been inbred to trotting families, which have mainly been made up from "Messengers," the "Clays," "Black Hawks," "Morgans," "Ratlers," "Abdallars," "Hamiltonians," "Patchens," "St. Lawrence," and "Tippoo" or "Royal Georges." And I hold, in common with the majority of all who have observed the effects of breeding, that the greater the amount of warm blood infused, and yet retain the trotting "instinct," the more valuable as a breeder will the sire or dam prove to be; hence the conclusion, that to breed up in mental quality and action from common mares, it is desirable to employ that sire which combines the stoutest blood with the most perfect trotting ac-

tion, and this rule will apply equally in all classes of trotting mares. This brings me to consider the advantage claimed in "Naubuc" as a sire of roadsters and trotters.

First, blood. He has two direct crosses of "Messenger," through his sire, "Toronto Chief," and has inherited from his dam, "Gipsy Queen," the warm, strong, thorough blood of Wagner and Glencoe.

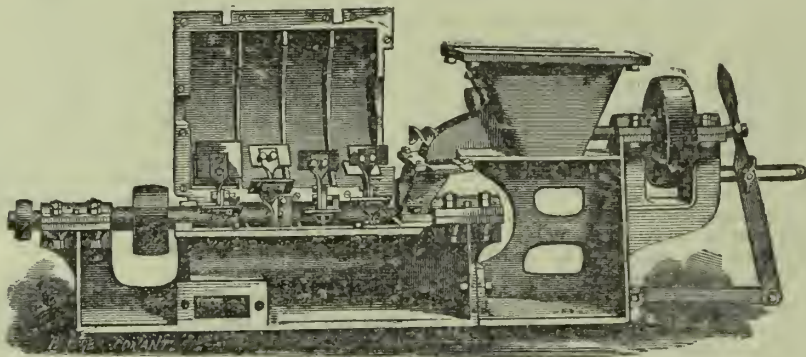
Second. His form combines as many characteristics of the American trotter as can be found in any one horse.

Third. He has a pure, open trotting gait, a fine knee and stifle action; is a generous, free roadster, and in his exercise never interferes or touches a hair, and has a rapid ambling walk. In disposition, he is kind, playful and fearless; his constitution is hardy and vigorous, and these qualities he seems to stamp in a high degree upon his colts, together with remarkable intelligence and a pure color, which are, with one exception, black or bays. His colts so far are remarkably large, smoothly made and blood-like in form. And lastly I come to speak of the successful trotting career of his family, though I do not offer this as positive evidence that he is worth a dollar, or will prove a success in the stud, but it did influence me greatly in his importance, for I hold that when we obtain all the desirable data respecting the blood and performance of a given horse, or family of horses, we ought to be able to predicate, almost to a certainty, future results, and this fact I consider fully verified in a remark made by the redoubtable James L. Eoff, who was undoubtedly bred in a section of the country

his dam, which is equally important. Many horses that have a traceable pedigree on the side of the sire fail at the stud when bred to cold-blooded mares. The preponderance of cold blood in the offspring counterbalances largely the blood the sire inherited from his sire. If this is not reinforced by the dam, the stock degenerates, and the breeder is disappointed and discouraged."—Dr. Barlow J. Smith, 637 California St.

Whelpley & Storer's Pulverizing Mill.

This machine is, as its name denotes, for the purpose of pulverizing all materials that are capable of such reduction, and its range is very great, operating with equal facilities upon ores, salt, paints, cement, bones, drugs, chemicals, and spices. It has been thoroughly tested in the Eastern States, where its merits are beginning to be recognized, and after some delay the agent of Messrs. Whelpley & Storer (Mr. G. D. Wyman), has erected works in this city upon Main street, between Howard and Folsom, where the machines are running constantly and our statements can be verified. The cut shows the upper half of cylinder thrown back to show the revolving paddles and the fan. The material to be crushed is first broken up so that it will pass through a screen, the meshes of which are about one inch. It is then fed into a hopper at



WHELPLEY & STORER'S PULVERIZER.

where quitters were not fashionable, with "whip in hand," and educated on the horse, said while "Gipsy Queen" was yet upon turf with maternal qualities undeveloped: "I had rather have a colt out of 'Gipsy Queen' than from any other mare in America." And her first produce was "Thomas Jefferson," and Judging from what he has shown, both in the stud and in speed and bottom, there is no reasonable doubt but that he is, all things considered, the best horse in America. His challenge to any stallion in the world to trot three races, has stood for nearly a year, with no acceptance, and no horse, mare, or gelding, has won so many races out of the number trotted as he. He is the fastest out of twenty-eight stallions that have a direct thoroughbred cross. (See N. Y. *Spirit of the Times*.) He won the champion stallion purse of America last fall at Buffalo. So much for "Naubuc's" full brother.

What of "Naubuc's" dam? No one doubted her blood or game. She won more long races than any mare living for the number of races she trotted. What of his sire "Toronto Chief"? He, too, was one of the fastest of his day, trotting one of the best two-mile races to wagon on record, and a half-mile in 1.8½ and jogged in 2.24, and lapped ("Butler") out in 2.20 to saddle.

With these facts before us, admitting that "Naubuc" has no record and is not fast, is it not reasonable to suppose that his produce will be a fair type of the rest of the family? I think I can safely promise to convince any man interested by showing him some of his colts, that his chances in breeding to him even common mares are good. I have one colt in harness, coming two years old, out of a common and medium size, that is 15½ hands high, that I expect will show a three-minute gait this fall, 1872.

Since penning the above article, the New York *Spirit of the Times*, of March 23, has come to hand, and in Wallace's concluding letter on "How to Breed the Trotting Horse," I see much to sustain the opinions I have expressed, and I take the liberty of quoting from an article headed: "A few Hints to Breeders."

"In selecting a stock horse, there are three or four essential requisites:

1. Blood. This includes the blood of

the right, and by an automatic and easily regulated feed is delivered into the drum, where it is caught and instantly reduced to a powder, the fineness of which depends upon the amount of air admitted with it, and consequently upon the draft by which it is carried through the machine. The fan is situated upon the same shaft with the paddles, and at the end opposite the feed opening, and it discharges the powder through a pipe into a dust room.

We know of no device better calculated than this for pulverizing bones, a business which must soon occupy an important position in the agricultural economy of this State.

For most applications it is necessary to have a chamber, or series of chambers or hoppers, to receive and collect the dust produced by the pulverizer. These are variously constructed, to suit the nature of the material which is to be reduced, and the conditions under which it is to be collected.

Pressure of air upon the interior of the dust room, and consequent back pressure upon the column issuing from the pulverizer, is prevented by a pipe leading from the extremity of the chamber back to an opening in the pulverizer, close to its feed hopper, thus inducing a constant circulation of the air.

How the Work is Done.

The mere statement of the facts in the case at first appears singular. Had any person, who never saw or heard of this contrivance before, been asked to give his opinion as to what could be the result of feeding ore into such an apparatus, he surely would not have predicted the results actually obtained. It would have been natural to expect a little splintering of the ore, and the speedy clogging of the pulverizing chamber, or perhaps the destruction of the whole machine in its ef-

forts to clear itself of its contents. But as the truth is quite otherwise, we may well ask by what kind of action is the ore reduced to powder? *It is not ground*, for the machine is expressly constructed to avoid a grinding action, the paddles being in no case nearer to the walls of the cylindrical shell than half an inch; and the ore does not seem to be comminuted altogether by splintering against the iron surfaces, for although such action undoubtedly takes place at first impact, yet when it has reached a certain stage, and that by no means near the ultimate one, it cannot seemingly continue to any material extent. The only explanation occurring here, and that not at all satisfactory, is, that in the powerful commotion produced by the swift rotation of the paddles, the particles clash fiercely together and triturate each other—a view confirmed in some measure by the appearance of the dust under the microscope.

But whatever the mode, it is certain that material is pulverized to an extreme degree, so that from the open end of the pipe it floats away in a dense cloud.

The function performed by this machine is a double one; it pulverizes and delivers without loss by a single and indivisible operation.

The quantity of dust furnished by this machine depends upon its size, upon the degree of movement that is communicated to the air and material, and upon the amount of material which can be kept in movement at one and the same time.

The machine which we examined will yield from one, to one and a half tons of dust per hour, according to the character of the ore or material.

Power Required.

As there is never in the machine but a few pounds of material, at any one time, the quantity of power required to keep the machine in motion at full velocity is but little—enough to overcome the friction of the journals, rigidity of belting, and the slight resistance of air in the cylinder.

The power used in running them is expended on the work of the machine.

Endurance of Wearing Parts.

The principal wear is upon the upper edge of the paddles which are made of chilled iron. When a set of paddles are worn nearly down to the bolt heads they are reversed, and used until the second edge is worn, when they must be replaced by a new set, which may be done by any ordinary mechanic, in an hour.

To convey to our readers some idea of the actual wear, it may be sufficient to state that a small machine has been running in this city constantly, for the past five months, having pulverized during that time several hundred tons of different materials and has worn out but two sets of paddles the cost of which was one dollar and fifty cents per set.

Through the courtesy of Mr. Wayman, we were invited to witness the different operations at the works, and the machines show a simplicity and completeness which promise them a wide field of usefulness in this State; while not the least of their merits is their adaptability to the feeding of fuel to boiler furnaces. For this purpose any coal screenings may be employed and these are reduced to a powder by the pulverizer, and this powder is lead directly into the furnace together with air enough for a most perfect combustion, thus doing away with most of the dirt, and ashes, while the amount of steam carried can be minutely regulated.

Every iron rail on a north and south railroad, so far as I have been able to examine, is a perfect magnet; the north end attracting the south pole and the south end the north pole of a magnetic needle. So also in a T rail on such a railroad, the lower flange attracts the south pole and the upper flange the north pole of a needle.—Dr. Richard Owen.

A good book and a good woman are excellent things for those who know justly how to appreciate their value. Some men, however, judge of both from the beauty of the covering.

USEFUL INFORMATION.

Education of the Eye.

How few there are that appreciate that optical marvel the eye! How few understand its mechanism, the principle on which it acts and the wonders which it accomplishes! As an avenue by which external impressions find their way to the mind, it is worth all the others man possesses. So gradually is its skill acquired that we hardly recognize it is acquired skill. We educate, through long and systematic practice, hands, feet and muscles; but in the main the eye is left to itself, to acquire as it may its power of estimating distance and size, color and the definition of form.

In this desultory way it acquires a skill beyond expression wonderful; yet we believe that with most the power of vision is only imperfectly developed. What is to hinder systematic discipline of the eye any more than of any other organ. To be able to see correctly is of as much importance to the mechanic as to the artist. Mr. Ruskin, in his admirable treatise on the "Elements of Drawing," lays particular stress upon teaching the eye to see correctly, and shows that the hand will have but little difficulty in learning to represent what is accurately seen.

The mechanic is often called upon to make forms for which his unaided eye must be the principal guide. The wagon maker may lay out his work by patterns, but the ornamental finish principally depends upon the nicety with which the eye can trace lines of grace and beauty. Even in shaping a boot sole there is great skill of eye. If any one doubts this let him try to shape a sole to the outlines of his own foot, and see what an uncouth, ungainly form he will make. None but novices will try the experiment, for any one who has tried it knows the difficulty in combining comfort and beauty in a boot sole. Shoemakers have been much denounced for their failures in this respect, but the reader may rest assured that their art is a difficult one. They cannot go by plumb line, square and level, like the mason or the carpenter, and no one who has ever tried to draw a sole pattern knows how slight variations will affect, favorably or unfavorably, its appearance. The cabinet maker, the carver, the sign painter, the decorator, all of these attain skill principally through the education of the eye.

The impressions gained through this organ may be placed under the categories of distance, size, light and shade, form and color. It is through the power to appreciate distance that we form our first estimates of size; then we begin to distinguish light and shade, and thus to gain power to define form, and lastly we distinguish, more or less perfectly, colors and tints.

A most profitable system of exercises might be devised by an ingenious teacher, calculated to train the eye in the exercises of its various functions in early youth, and to form correct habits of vision; for he who supposes the eye is not influenced by habit as well as any other organ makes a serious mistake.

The worst habit of all is the habit of partial sight. Instead of closely scrutinizing everything they see, the majority of men only superficially look at objects as they pass before them. They thus become inaccurate witnesses in court, inaccurate in their impressions of material objects in general, and fail when they attempt to imitate, because the images they strive to produce are imperfect.

If in early youth children were taught to look carefully at everything, and to constantly test the accuracy of the preceptions thus obtained, we believe the habit of close observation thus acquired would be of greater advantage than the result of any other mode of discipline now practised in elementary schools.—*Ec.*

DIFFERENCE OF HYDRAULIC AND COMMON LIME.—Most dealers in common lime sell also hydraulic mortar. It is not sold in lumps like common lime, as it can not be used so; it does not slake and fall to powder like common lime, but must be ground in a mill, like plaster of Paris; it is, therefore, only sold in powdered form, packed in barrels. In that condition it looks very different from common lime, as it is not white but gray or brownish, and feels more gritty than pure lime, which feels even fatty when moist. We never needed any other test; but if a chemical test be required, we should advise hydrochloric acid (muriatic acid,) which dissolves common lime entirely without leaving a remnant, while it will not attack the silicates of the hydraulic mortar. But as a practical test which at the same time determines the value of the hydraulic mortar, it is best to tie different samples up in small stiff linen bags, and throw them in water, let them lay and examine from time to time their increasing hardness. That which sets the quickest will not be the hardest in the end, but the purpose for which it is intended must settle the choice of the kind of cement to be used.

BROWN TINT FOR IRON AND STEEL.—Dissolve, in four parts of water, two parts of crystallized chloride of iron, two parts of chloride of antimony and one part of gallic acid, and apply the solution with a sponge or cloth to the article, and dry it in the air. Repeat this any number of times, according to the depth of color which it is desired to produce. Wash with water and dry, and finally rub the articles over with boiled linseed oil. The metal thus receives a brown tint and resists moisture. The chloride of antimony should be as little acid as possible.

The Preparations of Fancy Soaps.

Fancy soaps, which are made in great variety for the toilet, are usually scented with some aromatic oils. For this branch of the trade the ordinary commercial soaps are used, after undergoing a process of refinement, or a soap is specially made for the purpose from almond oil, or the like. Much taste is shown by the best London makers in the selection and combination of the perfumes, which, along with the coloring matter, such as vermilion, yellow ochre, aniline, etc., are usually boiled up with the soap. To facilitate this operation, as well-dried soap does not readily melt, it is usually cut up into fine shavings, and after boiling is well worked under the rollers until it presents a uniform appearance. If the soap is intended to be highly scented, or very extensive perfumes are to be employed, the cold process is adopted, as much of the strength of the scent is lost by boiling. In this case the soap is shredded as before, and the perfume and coloring matters well amalgamated with it by being worked in a mortar with a pestle. It is then divided into lumps, and roughly moulded with the hand into something of the shape it is finally to assume. After being left on a rack to dry for about a week, it is pressed into a mould, which imparts to the cake the form and device which may be required, and when taken out the edges are trimmed and the surface polished with the hand. *Cassell's Technical Educator.*

THE AGE OF OYSTERS.—An old oysterman can tell the ages of his bivalves with great precision. Those who are familiar with an oyster shell must have observed that it seemed composed of successive layers or plates overlapping each other. These are technically termed "shoots," and each of them make a year's growth, so that by counting them he can determine at a glance the year when the creature came into the world. Up to the epoch of its maturity, from five to seven years old, when they are in perfection, the shoots are regular and successive; but after that time they become irregular, and are one over the other, so that the shell becomes more thickened and bulky. Among fossil oysters, specimens are found occasionally of enormous thickness, and the amount of time that has passed between the deposition of the bed of rock, in which such an example occurs, and that which overlies it, might be calculated from those observations of the shape and number of layers of calcareous matter composing an extinct oyster shell. In some ancient formations, the above stratum of extinguished oysters may be seen, each bed consisting of full grown and aged individuals. Judging from the greatness to which some oyster shells have attained, this mollusk is capable, if left to its natural changes and unmolested, of attaining a patriarchal longevity.

SOLDER WIRE, so very convenient for some work, may be made as follows: Take a sheet of stiff writing or drawing paper, and roll it in a conical form, rather broad in comparison with its length. Make a ring of stiff wire, to hold it in, attaching a suitable handle to the ring. The point of the cone may first of all be cut off, to leave an orifice of the size required. When filled with molten solder it should be held above a pail of cold water and the streams of solder flowing from the cone will congeal as it runs, and form the wire. If held a little higher, so that the stream of solder breaks into drops, before striking the water, it will form handy, elongated "tears" of metal; but, by holding it still higher, each drop forms a thin concave cup or shell, and, as each of these forms have their own peculiar uses in business, many a mechanic will find these hints very useful.

GINLET POINTED SCREWS.—Most mechanics who work in wood do not appear to understand the eminent superiority of wood screws over brads and nails. In many places, one screw is worth three or four nails. When one is securing cleats to batten doors, or cleats to a wagon box, nails are very unsuitable when compared with the efficiency of gimlet pointed screws. Screws will hold two pieces of wood more rigidly than nails; and, if the timber should shrink a trifle, the screws can be turned up tight; whereas it is difficult, in most instances, to tighten up loose work with nails. Screws should be used in preference to nails in all places where there is an unusual strain on the parts to be held together.—*Ec.*

WATERPROOF LEATHER.—An ingenious patent is now being worked, by which leather for the soles of boots and shoes is rendered impervious to wet and damp by exhausting the air from the pores of the leather, and filling them up with a substance which unites with and adheres to the fibre, thereby strengthening without impairing the elasticity of the material. It is stated that the patent, known as "Farnshaw's Waterproof Leather," is not only likely to be largely employed for the purpose to which we have referred, but when asphalt pavement becomes more general, it will be possible to shoe horses with a material as hard as the asphalt itself, and which will prevent them slipping.

RESTORING CHARRED WRITING.—The restoration of the writing on manuscripts charred by fire may, it is said, be accomplished by separating the charred paper into single leaves, immersing them in a solution of nitrate of silver (forty grains to the ounce of water). The operation is to be conducted in a dark room, and when the writing is sufficiently legible the excess of silver solution should be washed out with distilled water and dilute solution of hyposulphite of soda.—*Am. Artisan.*

GOOD HEALTH.

ADULTERATION OF DRINK.—We (*Lancet*) referred cursorily last week to the adulteration of drink by brewers or publicans, and we would once more call attention to the extent and magnitude of the evil. We fancy it is far more due to the effect of adulteration by narcotics in increasing drinking than to increased cheapness of production, or any other ordinary cause. The object with which it is done appears to be that the working man, who sits down to refresh himself with a half-pint, or pint, shall at once become sufficiently muddled to lose his self-control, and to call for more and more in excess of his originally prudent and proper intention. A business that poisons men for the sake of plundering them is simply a public nuisance, and even if other kinds of adulteration are for a time left unpunished, no leniency should be shown to this. It is difficult to say by whom the noxious ingredients are most frequently added. In any enactment on the subject, care should be taken that publicans are not made scape-goats for more wealthy sinners. Between them, the lot of the poor man, who depends upon a beer-shop for refreshment, is hard indeed. If he go there, the chances are that he is drugged into drunkenness, when he wishes only to quench his thirst; and if he drink water, he incurs risks of poisoning by sewage, which are not to be lightly regarded.

EVIDENCES OF ILLNESS.—Pain and fever are not the only evidences of sickness. It is quite possible to have a tolerably regular pulse, a fair appetite, and even to sleep six or eight hours out of the twenty-four, and yet be far from well. In spite of these favorable indications, the body may waste away, and the nervous energy of the system rapidly decline. Emaciation, languor, and depression of spirits, although they may not be the symptoms of any specific disease, are infallible signs that the life power of the frame is deteriorating, that the mainsprings of vitality are losing their elasticity. If no help be given to nature in this emergency, a collapse of the vital machinery will finally ensue, and a life that might probably have been extended to the full scriptural span of three score years and ten, will be prematurely brought to a close. Thousands of such cases occur every year. Physicians call this running down of the animal machinery, atrophy, marasmus, nervous debility, etc., and it is often mistaken for pulmonary consumption. It arises, however, simply from a lack of constitutional energy, and a corresponding torpidity of the reproductive principle upon the vigor and activity of which the nourishment and repair of the whole organization depend.

GROWING MEN.—Dr. W. Holmes has shown what every body knows, that we are, as a race, deteriorating. But he has not given us the reason why the New England man grows smaller in bone and muscle. Chemistry tells us it is owing to the want of mineral in the soil to produce bones. Much is owing to our unnatural habits of life. Much to the weakness of our female sex, who do anything but develop their muscular powers. But the main reason why the race deteriorates so rapidly in the eastern part of New England, is owing to the hard granite soil, which does not furnish limestone sufficient to form the bones. In Kentucky, Ohio and Western Vermont, men grew to large size because of the limestone formation beneath the soil. Parts of families have emigrated from Massachusetts to limestone regions, and the result in the next generation, has been a larger bone development in those who left Massachusetts than those who remained. Kentucky, Ohio and Iowa will grow great men. The finest figures in the world will be found in the valley of the Mississippi in a few generations. Indoor labor, so unnatural for men, will weaken the vital powers and stop the growth in large cities, but the great and glorious West, with its broad prairies, will compensate for the growing feebleness of the Eastern States.

USE OF LEMONS.—When persons are feverish and thirsty beyond what is natural, indicated in some cases by a metallic taste in the mouth, especially after drinking water, or by a whitish appearance of the greater part of the surface of the tongue, one of the best "coolers" is to take a lemon, cut off the top, sprinkle over it some loaf sugar, working it down into the lemon with a spoon, and then suck it slowly, squeezing the lemon, and adding more sugar, as the acidity increases from being brought up from a lower point. Invalids with feverishness may take two or three lemons a day in this manner, with the most marked benefit, manifested by a sense of coolness, comfort, and invigoration. A lemon or two thus taken at "teatime," is an entire substitute for the ordinary supper of summer, and would give many a man a comfortable night's sleep, and an appetite for breakfast, to which they are strangers, who will have their cup of tea, or supper of "relish" and "cake," and berries, and peaches and cream.—*Hall's Journal of Health.*

RAILWAY AIR-CUSHIONS.—A writer to the *Medical Times* refers to the fatigue of the limbs produced after a long railway journey as due mainly to the trembling motion of the floor under the feet, and states that, having suffered considerably from this abuse, he was induced to try the experiment of using the well known air cushion as a footstool. This answered so well that he has never travelled without using one in this way, and has found the effect to be a remarkable improvement.

A SIMPLE AND EFFECTIVE REMEDY FOR CORNS.—When a young man, I used to be very much annoyed by those painful excrescences called "corns," on the toes and feet, until I was told of a very simple, but effectual remedy for them, by some person. It was to bathe the feet in tepid water, to soften them; then pare them off very closely with a sharp knife; then rub on well, green peach tree leaves; when, after continuing the rubbing once or twice a day, the corns will entirely disappear, and not return, without the cause which first occasioned them. I have often tried the remedy, and never found it to fail yet. It seems to be the prussic acid in the peach tree leaves that takes them away.

A good corn salve could no doubt be made for winter use, by bruising the peach leaves when green, then boil them in water until the strength is extracted; then take out the leaves; strain the water off the sediment, and add a sufficient quantity of resin, beeswax, tallow and lard oil to make it soft enough, and simmer down, without burning, until the water is evaporated. Soften and pare the corn, as before directed, spread it on a small piece of cambric or linen, and apply, putting on the sock or stocking carefully, so as not to rub it off. Keep applying until they disappear.—*Country Gentleman.*

IF A WOMAN'S DRESS is suddenly enveloped in flames, instead of running to her, or out of the house, speak distinctly and commandingly: "Lie down and roll over!" Meanwhile, rip up the carpet, or drag off a bed blanket, throw it over the person, and then proceed to wrap her up closely in it; this is a more certain and speedy extinguisher than water, is more accessible, and entirely safe to the person giving aid.

If a woman faints away, instead of yelling out like a savage, or running to lift her up, lay her at full length on her back on the floor, loosen the clothing, push the crowd away, so as to allow the air to reach her, and let her alone. Dashing water over a person in a simple fainting-fit is a barbarity, and soils the clothing unnecessarily. The philosophy of a fainting-fit, the heart fails to send the proper supply of blood to the brain; if the person is erect, the blood has to be thrown up hill, but if lying down, it has to be projected horizontally—which requires less power, is apparent.

EXPLOSIVE PILLS.—Some pills prescribed by a physician in London contained one-half grain nitrate of silver, one-sixth grain extract nuxvomica, and one-half grain muriate of morphine, together with *Cons. ros.* and extract of gentian. They exploded in a very short time, evolving a considerable amount of heat. A similar case occurred in the practice of Dr. Jackson, of Nottingham, England, who prescribed pills containing four grains nitrate of silver, one grain muriate of morphia and extract gentian. The lady patient, who had the box about her person, was badly burned by the explosion. Pills containing nitrate of silver and creosote or carbolic acid become heated, and even take fire. Of course, when chlorate of potash is employed the explosion is much more violent.

EVENING AND NIGHT AIR.—From the time when the sun withdraws his light in the evening, until he scatters the fogs and mists of night with his morning beams, the air is in a condition much less congenial to health than during the day. Light itself is an invigorating element, and darkness has a depressing effect upon the body as well as the mind. Moreover, from the hour when the dew begins to fall or rise—we know not which—until the East is brightened and warmed by the morning rays, the atmosphere contains a smaller proportion of oxygen, or vital air, than when the sun shines.

FOR OFFENSIVE BREATH.—For removing this disagreeable affection almost the only safe and effective thing to use is the concentrated solution of chloride of soda. From six to ten drops of it in a wineglass full of pure spring water, taken immediately after the operations of the morning are completed. In some cases the odor arising from carious teeth is combined with that of the stomach. If the mouth be well rinsed with a teaspoonful of the solution of the chloride in a tumbler of water, the bad odor of the teeth will be removed.

COOL ROOMS.—Open all the windows and doors at daylight, and let them remain open at least until sunrise, then close them, and darken the windows, and they will remain delightfully cool and fresh for a great part of the day, besides keeping out the dust and flies; for want of this precaution many splendid parlors have a close sickening smell as you enter them, wholly incapacitating you from enjoying the beautiful things around you, and enjoying the visit to your friends.

WHEN BEGINNING TO USE GLASSES, use them as short a time as possible, only in deficient light, or on minute objects, and then change the strain to distant or larger objects. By a judicious attention to these two points, the age of the sight will be retarded many years. And as reading is one of the luxuries of the age, and one of its most delightful pastimes and amusements, we can not be too careful of the eye-sight, and should study how we may best husband its powers.

Food forced upon the stomach in the absence of all appetite, can never properly nourish the system. Even when it is retained, it is never more than half digested, for the palate and the mucous membrane of the stomach are in sympathy with each other, and what the palate loathes, the gastric juice only imperfectly dissolves and assimilates.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWER, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. R. EWER, A. M.
ASSOCIATE EDITOR.....I. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, June 8, 1872.

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APPRECIATION.—We are in receipt of a letter from a subscriber at Jackson, who wishes—while he renews his subscription—to express his thanks to us for an article that appeared in the RURAL some time since, in fact nearly a year ago. He thinks he cannot better acknowledge his gratitude than by continuing his subscription to what he sees fit to speak of as, "your estimable journal."

THE WOOL CLIP IN TULARE.—The season shows a falling off—owing to the severity of the winter—as compared with the clip of last year. The Visalia Delta, from the best information it can obtain, through the wool-growers and purchasing houses, estimates this year's product at 947,335 pounds. Last year it reached 1,474,500 pounds.

VALLEJO.—At a meeting of the District Agricultural Society, held at Gen. J. B. Frisbie's office, on June 3d, it was agreed that the Fair should commence at Vallejo, September 3d, and continue four days. The capital stock of the Society was fixed at \$100,000.

ON FILE.—Fruit and Ornamental Trees Dying. Four Years on a Farm. Tule plowing. A New Invention. The Wild Flowers of San Joaquin Valley. River Side. Sensations by the Way. Query, in regard to Alkaline Soils. Mary Mountain—in type. Impoverishment of the Soil.

OREGON WOOL.—A wool-grower, at Salem, Oregon, who has 1,800 head of sheep, sold his wool clip during last week for forty-six cents per pound—\$1,000 being paid down.

THANKS.—For cards to the Literary and Musical Entertainment of Prof. Kowilton, at Petaluma, Thursday, June 6.

The State University and Grounds.

We recently paid a visit to the University grounds at Berkely. There is but one opinion as to the natural advantages and general beauty of the location. Its general slope is towards the bay. The land is undulating or rolling, just enough to give variety and beauty. It lies in a position to escape the direct raw winds that rush in from the sea through the Golden Gate, and yet to receive the beautiful effects of their dampness. It contains a good variety of soils, rich and fertile in the ravine or small valleys, and lighter and less fertile on the ridges, so that on the whole it is well calculated for the purposes for which it was originally intended, an experimental farm attached to an agricultural college.

Here, under proper management, an intelligent and practical superintendent, the sciences as taught by the professor of agriculture in the laboratory of the college could be advantageously applied and practically tested by the students. Here the peculiarities of the California soils and climates could be thoroughly learned, and all the varieties of crops could be produced, and the best times and modes of planting each could be determined by the experiments of the pupils themselves. In short, under such a management students would become scientific and practical agriculturists, capable of in turn becoming valuable teachers. And as they go out into the State to engage in business for themselves, they would diffuse valuable and practical knowledge among the generality of farmers, and thus elevate the standard of agricultural intelligence and skill, and hasten the development of our agricultural and horticultural resources, and increase our productions.

Such was the original intention of Congress that our agricultural colleges should become, and such was the intention of our State Legislature. And if these intentions of the Legislative bodies had been carried out from the beginning, our Agricultural College would now have been a valuable and practical working institution, and the farm connected with it would have been in every sense of the word an experimental and model farm—an example for the State.

Ornamentation of the Grounds.

The land connected with the institution has, under the management, not only not been cultivated as an experimental farm, but it has at great pains and expense been practically destroyed for any such purpose in the future. It has been very skillfully laid off into plats and drives, and planted very tastefully with forest trees—not for the purpose of teaching the valuable art of forest culture—for there is but two or three varieties of trees in the whole ground, but for the purpose of producing a landscape effect.

In short the grounds originally and properly intended for an experimental farm have been converted into an ornamental park, and thus rendered entirely useless for any practical agricultural purpose. The trees planted are mostly of two varieties—the Monterey Cypress and Australian Blue Gum—both of which look very ornamental now and will do so for some years to come—but in time will become tall forest trees entirely obstructing the view and converting the grounds into a forest, with carriage ways meandering through it, of no practical value to the institution, and in fact, destroying the natural beauty of the location.

Work to Commence.

For want of funds, all work on the building, intended for an agricultural college, was suspended some time since, and the foundation wall looks like heaps of ruins. Lumber lies here and there in great piles, growing no better under the influence of the weather.

We were informed however, that the Regents intend recommencing the work of building soon, the Legislature having appropriated the liberal sum of \$300,000 for the purpose.

Under such circumstances, we would suggest that the people of the State have but little confidence that this sum of money, to raise which they are to be called upon to pay heavier taxes will be any more economically or judiciously expended than has that which the Regents have already laid out.

The people would like to see some practical men on the Board of Regents—practical, we mean in that sense, that practical men are required for the work they have to do—for the trust they have to administer. Lawyers, stock

brokers and grain speculators who are up to their eyes in money making for themselves, are hardly the class of men the people would choose to found and put in operation an agricultural college.

The people are apt to believe that some of the provisions of the law creating such an institution should be carried out in their plain intent and meaning.

The people are apt to think that where the law provides that the secretary should be a practical agriculturist, and should reside in the institution; that these provisions were intended to mean what they say, and that some decent respect should be paid to them in the choice of that office. And now, that the Regents are about to expend \$300,000 of the people's money, we would suggest some radical changes in the policy of the managers of the institution, or a change in the managers themselves.

Doctored Wines.

This is a term used to denote certain processes applicable to the juices of the grape before they are fitted for the world's markets. It is a mistake to suppose that it is a process simply of mixing certain wines with a given quantity of alcohol to suit the tastes of consumers. There is hardly a wine sent out from the grape growing countries of Europe that is not a doctored wine. In France and Germany there are large establishments for the manufacture of glucose or grape sugar. Thousands of tons annually of this grape sugar, is used in the wine making districts to supply the saccharine deficiency of their grapes, in the production of good wines.

In the vicinity of Bordeaux large quantities of grape juices are produced, requiring not only sugar for certain qualities of wines, but some of them also require acids, the predominance one being tartaric. Both of these ingredients with additions of water in some instances, for largely increasing the volume, are all added or mixed with the grape juices before fermentation. Only certain coloring ingredients are ever added after fermentation is finished.

The Effect of Season.

A season of unusual heat and drouth in the vineyard districts, always calls for more acid than the grape contains, and this with a large quantity of water makes up any deficiency in the grape. A cold and wet season on the contrary calls for largely increased additions of sugar, and which are invariably made.

The vintages of different seasons in France and Germany, differ greatly in quality. The best being always those of seasons remarkable for the dryness of the atmosphere during the ripening and gathering of the fruit. In such years only acids and water are added to the juice. This corresponds to the condition of the grapes and wines of California; therefore with the simple additions of water and tartaric acid, we have every element for a largely increased quantity of wine without injury to the product.

We hear of the failure of the European vintage of certain seasons, but the effect is simply to put upon the markets of the world an inferior wine; but never is the quantity perceptibly lessened. The reason is, that a certain quantity is required; and must be had, and if it is not forthcoming direct from the grape, then it is made up with sugar, acid and water.

Hence we say, that California wine containing the saccharine quality largely in excess, can be safely experimented with, by the additions of acids and water previous to fermentation.

Grain Sacks.

As we anticipated when we wrote the article on the grain crop for our issue of May 25th, the dealers in grain sacks have been putting up a corner on that article. They saw too good a thing to lose and so determined to secure it at the expense of the farmers.

We are also glad to know that the farmers are combining to defeat their little game by sending East for their sacks. The Farmers' Clubs are moving in the matter and will probably get their sacks this year cheaper than ever.

In this connection we would suggest that if sacks cannot be obtained at a fair rate in time to contain the grain as it is threshed, the farmers can build temporary bins in the fields and store the grain in them until such times as the price of sacks comes down. Let this be done and we will guarantee the speculators will shell out their sacks at fair rates.

Currant Wine.

We are asked for a reliable recipe for making currant wine; not that it will take rank with the wine from grapes, but that our correspondent has somewhere tasted excellent currant wine, and would now like to convert a part of a large crop into a delicious beverage, called currant wine.

We can comply with the request, and offer a recipe that will give the fullest satisfaction to the experiment. Pick the currants with the stems, but allow not a leaf large or small to mix with them. Mash the currants in any way that can be done without mashing the seeds; strain through a cloth, which is best done in a common wine or cider press. To each gallon of juice add two gallons of water; and to each gallon of the mixed juice and water add three pounds of clean white sugar.

To get all there is of juice from the mashed currants, after the first pressing, soak the pomace in water for a few moments, press again and use this acidulated water as so much clean water to be added to the first juice, two gallons to one, but with no further addition of sugar.

Give the admixture a cool place in a keg or barrel filled nearly to the top, but not to overflowing. Bung tight but allow it vent for two or three weeks. When fermentation ceases, stop the vent, but not too tightly, so as to endanger the cask in case of a continued or renewed fermentation, and in six months it will be in prime condition. We would remark that a good wine can be made, using only two and a half pounds of sugar instead of three to each gallon of mixture, but it will not be as strong in alcohol, and its long keeping is somewhat endangered. The same rule is applicable to the juice of all other acid fruits, for the making of the so-called wines.

Crop Prospects.

We learn from Mr. G. W. F. Carter, who arrived in town last evening, says that the prospect for an enormous yield of the cereals throughout a large portion of the San Joaquin valley was never better than now; that the wheat and barley fields in point of extent were perfectly immense, and as a general thing the grains are developing finely.

The unusual cool weather of the last month, unaccompanied by any of the drying, northern siroccos, has brought forward the grain upon thousands of acres to the point of a certain yield, where three weeks ago it was thought little or no grain could possibly mature.

We hear similar reports from Solano, Yolo and other central and northern counties, and there seems no longer any doubt, but that, with the exception of a few small districts here and there, the grain yield of the State this year will be much larger than ever before, both on account of vastly increased acreage and the average yield.

Farm hands Wanted.

From every section of the State we hear of the great scarcity of farm hands and laborers. In Los Angeles county, at least 150 men are absolutely required to secure the grain crop sufficiently fast to save it from large waste. In the great San Joaquin valley, among the vast grain fields there, a thousand extra hands will find employment through a long harvest season, at fair wages.

The same is true of the Sacramento valley, a scarcity of harvest hands is the theme of everyday's discourse; while the pine forests of Nevada county, and the redwoods throughout the State have not a sufficiency of log and lumber men, and wages are consequently advancing. There is no longer any need of able-bodied men being out of employ for want of work to do. If they don't find work now for months to come, it will be simply because they are too lazy to work, and prefer loafing round the cities.

METEOROLOGICAL.—The monthly mean of the barometer in San Francisco during May was 29.986 inches. The monthly mean of the thermometer was 56.3°; and 0.18 inches of rain fell. The prevailing wind was southwest and the total number of miles it traveled was 8,355.

DAIRYMEN have commenced driving their stock back to the mountains, and for the next few weeks the ding-dong of cow bells will almost constantly play upon the road thitherward.

Life on the Farm.

"Five Years on a Farm," in our issue of the 18th of May, seems to have caused a waking up of that—in too many instances—much neglected branch of the home and fire-side partnership of our rural population. Wives are finding out that they are justly entitled to certain privileges, that have been denied them, and now that they have found an exponent and friend in the *RURAL*, are beginning to make themselves felt, and in due time will be fully appreciated and their reasonable wants, in the conduct of household management and economy, to a greater extent than every before, will, or ought to be granted them. Ladies we are pleased to hear from you.

EDITORS PRESS:—Since reading the resolute words of the person, who so much wants a front fence, I have been thinking that there are many others that should follow up the line of improvement in the same way and even to other things than fences. It is a common sight to see a farm with fields enclosed, and a large well-made roomy barn and granary, and a dwelling house so small and poor that the inmates are crowded into two small rooms to cook, eat, sleep and do all the work for and appertaining to a large farm. Not but that the animals should not be cared for—they should indeed be provided with food and shelter—but man had also, far better care a little for the hipod as well as a good deal for the quadruped.

I believe in a woman having her work made as easy as a man's, that is, I believe in washing machines, sewing machines, wringers and various small conveniences in abundance, as much as he believes in mowers, reapers, headers or any others that he may use about his labor; a woman's work is just as hard for her as a man's is for him. I am for woman's rights thus far, but I do not feel it right to go the polls, although there are many intelligent and well educated persons that do.

There is a most excellent work out by Catharine E. Beecher and Harriett Beecher Stowe, relative to the house, that I recommend to the perusal of housewives, not that it should be followed up to the last degree, but it will give valuable hints and a guide to ideas and original inventions, that often rise in the active brains of the interrogative Yankees.

It would take a pretty good sum to do all that the above mentioned authoresses speak of, but a person with an ordinary quantity of mechanical genius can follow up the suggestions of his own mind with very little capital. The cabinet maker and the furniture dealer need not have but little of his wares in our homes (I am speaking of home in the country) if we but think what comfortable, pretty and durable furniture, chintz, and pine lumber, with the help of labor and varnish, will make.

Our friend of the fence tells what she has accomplished in the chicken business, and I have often had my attention drawn by many good dames to the sewing machine, the quantity of groceries, the clothing furnished for a large family, and with much pride was it told that all was done with their own hands besides the work which was necessary to be done, and all with chickens and eggs. I will not encroach any further on the space of your excellent paper for fear something more important than this may be crowded out.

Mohair—Its Value.

The following letter from a Kentucky, Cashmere goat grower, will be read with interest by all engaged in the growing of this animal in California:

MR. N. GILMORE, Dear Sir.—Your favor of the 2d inst, reached me last night, having been forwarded to me here where I have a pleasant winter home, on account of infirm health. I regret I did not receive your letter in time to send you a communication which would embody the information which you particularly desire, and also that the statistics which I have as to the consumption of mohair are at home in Kentucky and of course not now accessible, and I fear to state from memory only. But I can state a fact which will not be unacceptable nor inappropriate, viz.: the mail last night brought me a letter from Messrs. Bauendahl & Co., of 86 North street, New York City, in which they inform me they have sold the remnant of my last clip of goat's wool at 77c. per pound, (the former lot and superior wool having been sold at 85c. per pound, just as it was shorn,) and also that they have an order for 1,000 pounds of mohair of $\frac{3}{4}$ blood for which they will pay 75c. per pound, and inquire if I have any more and where they can obtain any.

If the publication of these facts will aid you in the good work in which you are engaged they are at your service.

The interest in Cashmeres is growing fast on this side of the Continent, as well as with you.

I had a pair sent to me here from home, with which to begin to raise them here, as I am sure this State and all the pine land region of the South, is well adapted to them.

I will return home in May next, and will be well pleased to hear from you at any time, and remain with best wishes, your friend,

ROBERT W. SCOTT.

Miltonville, Florida, March 4th, 1872.

P. S.—Please refer any parties who raise mohair, to Messrs. Bauendahl & Co., who have sold several clips for me satisfactorily, and

they can do better with it than anyone else. The manufacturers should be sustained and supplied when they call for wool, as their demand will be the best encouragement to raising it.

Chamaerops Excelsa.

We present our readers with a fine engraving of one of the great family of Fan Palms, known as *Chamaerops Excelsa*. It differs from most palms, in not being so exclusively tropical; but will flourish anywhere in temperate latitudes; is a native of Central China; a very ornamental dwarf palm, highly effective either for decorating the conservatory in winter or the open lawn at all seasons. Can be had of E. E. Moore, Washington street.

It has very large broad leaves and produces a striking and picturesque appearance wherever introduced.

Plano, Tulare County.

EDITORS PRESS:—This has been quite a pleasant month, with a few warm days during the past week, and to-night we are having a strong northwest wind with flying clouds and a few drops of rain. With us, upon the plains, the harvest is nearly over, the grain cut by headers is in stack awaiting the thresher, which will probably be along in about two weeks to dispose of it. Cabbage are all marketed; potatoes ripe, and another load will take them all away; peas ripe and mostly threshed for seed and feed; green corn, for lack of spring showers, or irrigation which we were too busy to



CHAMAEROPS EXCELSA.

give, will only make a few roasting ears, that are fit for the table.

Tomatoes are ripening slowly in our home garden, and summer squash are large enough to use. We use them in place of egg-plant, cooked the same way. I think them quite as good and easier raised; grasshoppers do not touch them yet, though thick on the cabbage and beans, both sides of them. The China red eye snap beans have all gone to market; on the river the spring has but fairly begun, excepting grain, which is not much behind us. Some of the orchards give promise of a fair yield of fruit, especially peaches, and it is probable grapes will be plenty as usual. A peculiarity of this season is the fact that there has been no more rain in the foothills than on the plains, as shown by rain gauge, kept at both places, and also by crops drying up there sooner than usual. Yours truly, ISAAC B. RUMFORD.

May 30, 1872.

FARMERS' CLUB.—The farmers of Napa mean business, and will organize a Club. Following up the suggestion made in the *Register* a week or two since, we have seen a number of leading farmers and find that the idea takes well with them. Accordingly, the following gentlemen sign a call for a meeting to be held at the Court House in Napa City, on Saturday, June 8th, at 1 o'clock P. M., for the purpose of effecting an organization. The object is simply to advance the interests of farmers, fruit growers and stock-raisers in this county, by affording an opportunity once a month at least, for an interchange of ideas and the discussion of all questions affecting their interests. All are cordially invited to attend.

ICE MACHINES.—Messrs. G. & J., of Hot Creek, Nevada, are informed that there are no ice-making machines in use, made or sold in San Francisco; nor do we know of any we can recommend. Ice-making, like sugar from beets, requires extensive and costly machinery to manufacture the article profitably.

Favorable Weather.

The last three weeks have been most favorable for the grain crops of the State. But one day, of north wind has been experienced in that time and the weather has been uninterruptedly cool and favorable. The result will be that millions of bushels of grain will be gathered in the State more than would have been with a continuance of the weather we experienced during the previous period of three weeks. The rain of last week, while it did but very little damage to the hay that had been cut, for the reason that it was followed with a day or two of cloudy weather, will prove of immense value to the grain crops, and if we are favored with a continuance of like favorable weather for a week or two longer the wheat and barley crop of 1872 will be the largest and best ever harvested in the State and will place our farmers in easy circumstances generally.

Sherman Island.

While the upper end and San Joaquin side of Sherman Island is so freed from water as to admit of cultivation, yet there are thousands of acres which cannot be sown this year. Had the inhabitants of the island levied a tax and pumped the water from the land immediately after the freshet, they would have been able to place the whole island under cultivation and ten times paid the expense incurred.

We clip the above from the *Autioch Ledger*, but we are assured from parties living on the island and who are owners and therefore interested and ought to know whereof they speak,

[Continued from page 356].

forty head of sheep, and the clip of wool last year, netted him \$85, and besides this, his family had all the mutton they wanted to use; he also found them very useful in cleaning his farm of all weeds and foul stuff. Considered sheep a very economical animal to have on a farm.

No further business appearing the Club adjourned to meet at Walnut Creek, Saturday, July 6th, 1872. R. B. MILLER.

Walnut Creek, June 1st, 1872.

Solano and Napa Agricultural and Mechanic Arts Society.

The farmers, mechanics, and others of Solano and Napa counties, interested in union of effort, have organized a District Agricultural and Mechanics Art Society at Vallejo, where a suitable building and fair grounds will be at once put in readiness. After several meetings, the organization of the society was completed on Monday last.

The object of the organization is the furthering of the interests of the farmers, vine-growers and mechanics of the district, by bringing them in communication with each other for the interchange of ideas looking to the general welfare, and to arrange for a District Fair at an early day.

For President: A. M. Stevenson, farmer, Vacaville.

Vice-Presidents: J. B. Carrington, farmer and mechanic, Vallejo; J. L. Heald, mechanic, Vallejo; Nathan Coombs, farmer, Napa; James M. Thomas, horticulturist, Suscol; A. C. Palmer, mechanic, Calistoga; M. R. Miller, horticulturist, Pleasant Valley.

Secretary: John M. Gregory, lawyer, Vallejo. Treasurer: J. B. Frisbie, banker, Vallejo.

Thirty Directors were also chosen, fifteen from each county.

After an interchange of opinions on this subject, it was resolved by the Board that the first Exhibition by the Society be held commencing Tuesday, September 3d, and continue four days.

The sum of \$7,350 was subscribed on the spot towards carrying out the objects of the Society. The Board of Directors meet for further business on the 17th inst.

El Dorado Agricultural Society.

The members of the El Dorado County Agricultural Society, assembled in the school house, at Coloma, May 25th, for the election of officers, and to take such other action as might be proper to place the Society on a live, active basis. The election of officers was held with the following result: President, Geo. G. Blanchard. Vice-Presidents: A. Litton and M. S. Robinson; Secretary, C. D. Brooke; Treasurer, Robert Chalmers. P. D. Brown and J. W. B. Dickson were elected Directors, and with the other officers of the Society, constitute a Board of Managers. Geo. O. Kies was appointed to act with the President and Secretary as a Committee on Publication.

Visiting Committee for present year—J. M. B. Weatherwax, Dr. Harkness, E. M. Smith, Oscar Leachman and W. D. Othick. It was decided to hold a Fair, for two days, at Coloma, some time in the fore part of September, the time to be fixed by the Board of Managers. The following gentlemen were appointed a committee to confer with the railroad companies in regard to freight on fruits and other products of the county: C. D. Brooke, M. S. Robinson, Wm. White, Robert Chalmers and O. Merrill. Adjourned to meet in Placerville on Saturday, June 8th, at 10 A. M. The annual membership is fixed for the present at \$2.50. Application for membership can be made to any of the officers of the Society.

Monterey County Agricultural Society.

Society met at Natividad, May 25th, pursuant to adjournment—W. V. McGarvey Esq., in the chair.

On motion, the Constitution, Rules and Regulations, reported at a previous meeting, were read, amended and adopted.

Forty-four persons having joined the Society by paying the entrance fee, the following officers were elected:

B. V. Sargent, of Monterey, President; W. L. Carpenter, Salinas City, Secretary.

After instructing the Secretary to purchase the necessary books, etc., for the use of the Society, and to advertise its formation, with a request to the people to come forward and join, the Society adjourned to June 29th, 1872, at 1 o'clock P. M.

INCREASING.—Travel to the Yosemite is steadily on the increase, and the probability is that, with the improved traveling facilities afforded this year over any previous one, more people will visit this famous resort this season than at any time since it became a place of public resort. The Merced river is higher at present than has ever been known at this season of the year, and those who wish to see the falls in their greatest grandeur should not defer their visit much longer, as when the river becomes low the valley is less attractive. People.

Fruit Packages.

The old system of returning the packages to be again refilled with fruit, is among the things of the past. All the fine fruits now appearing in our markets are in bright new boxes or baskets, to be sold with the fruit. All parties are pleased with the change; even those having large numbers of the old style of boxes, are giving their orders to sell them with the fruit, and as soon as all are sold the new cheap packages will be substituted. The fact is, the same fruit in the new box is taken by the consumer in preference, even at a slight advance in price. The system will be generally adopted and prove in the end advantageous to all parties.

LARGE CROP OF HAY.—From our own observations and from the representations of farmers from different sections of the State we are of the opinion that the hay crop of this season will be much larger than ever before. We hope that this fact will not lead the farmer to carelessness in securing all he can. We also hope they will not for this reason let their grain straw go to waste. There is stock enough in the State to consume all the hay that can be secured besides all the straw that may be saved. It is high time that the practice of allowing straw to lay in the pile and waste, or be burned, was abandoned.

Let all be saved and feed better stock and keep them in good condition. It will pay.



Farm Music.

In the morning, dim and sweet,
Slanting glints the sun;
The milkmaid trips with hurrying feet,
The farmer's day is begun.
Hark! 'tis the mower blithe,
As he sharpens the trusty scythe—
Crink, crank—crink, crank!
In the dewy morning air.

In the summer, near to noon,
Flaming climbs the sun,
The scythe-blades sweep to a pleasant tune,
And the task goes merrily on.
Hark! shrill and fine,
The locust's hot-weather sign—
Cree-ee, cree-ee!
In the blazing morning air.

In the summer day at noon,
Right over glares the sun.
The mowers sweep to a slower tune,
And wish the task were done.
Hark! a chattering loud,
'Tis the noisy crows in a crowd,
Caw, caw, caw, caw!
Through all the hazy air.

The primrose wakes to bloom,
Downward rolls the sun.
The west is fire, the east is gloom,
The mower's task is done.
And hark!—hark!
What wings through the fragrant dark?
Whippoorwill, whippoorwill!
Through all the morning air.

East and west are gloom,
But the moon is rising fair,
And the night is warm, and the clover bloom
Sweetens all the air.
And hark!—hark!
Who calls through the silver dark?
Hoo, hoo, too whit, to hoo!
Through all the midnight air.

Croquet.

If no printed rules can be found that are satisfactory, all amendments or changes should be made in writing, and inserted in the proper places for convenient reference. Such a course will soon convince any one that it is much easier to find fault with the rules than to compile a satisfactory and consistent set, but any other method is always productive of disputation and unpleasantness.

As at this season many are purchasing new implements, some advice concerning style and quality may be of interest. For those who have regard only to economy, nothing can be said. When a complete set of croquet balls, mallets, etc., put up in a case, is manufactured so as to be retailed, after the addition of two profits, for from three to four dollars, quality cannot be taken into account.

Among our native woods few are suitable for croquet balls and mallet heads, and none superior to good rock-maple or sugar-maple, and for balls no others should ever be used. Turkey boxwood has been very popular among export players, and is certainly very durable; but it is the general opinion that in order to keep the proper relative proportion between the weight of the mallet-head and the ball, without making the head too large for convenience or elegance, the material for the head should be of greater specific gravity than the ball. For this reason boxwood mallets and rock-maple balls have formed a very popular combination with experienced players, but for children and others who do not understand the game they are not so desirable, because the balls are used up more rapidly than with a lighter and softer mallet.

For mallet-heads no wood is superior to Honduras rosewood. This wood is somewhat rare in the market during certain seasons, but is very durable and elegant when polished, although not as beautiful as the dark soft rosewood, which is, however, absolutely useless for croquet.

Many players have mallets of peculiar size, weight, and form for their own use.

There is no occasion for the long handles now in common use, unless the sledge-hammer style of stroke is to be adopted, which is, let us suggest, better suited to slaying oxen than playing croquet,—or the spoony style, by which some old Betty in pantaloons secures accuracy of stroke at the sacrifice of all elegance and grace.

The one great cause of the universal

popularity of croquet is the fact that it can be played on almost any size or form of ground, although ordinarily it is desirable that the ground be nearly twice as long as wide.—*Scribner's for June.*

The Boy's Side.

I have been a good many years occasionally worried by a little program in the papers in the nature of a receipt for keeping a boy on a farm. This Simon pure and only genuine method is to give the boy a piece of ground and let him own what he can raise. This looks like a premium on selfishness and if there is any hog in the boy the result might be too much pork for a shilling; always supposing the aforesaid can be made to care for his scrap of ground. As the boy naturally takes a general interest in the farm business and always shows a lively preference for particular kinds of work, it would seem a simple and sensible thing to ask him what he wants and allow him to have it. If the boy does wrong he can be reasoned with seventy-seven times and then pickled, but there is such a thing as boys' rights, which would be better appreciated if every man who governs one had once been a boy himself and still remembered his grievances. There is no serious danger in the boy's thinking he knows something; the need is to confirm what he really knows, by using his advice, making him a partner in the concern and making him a sharer in the profits. The beauties of farming are conspicuous, even to boys, when seen with the resulting greenbacks. Let him see the connection between judgment, care, work and money; give him a liberal share of each, and then if he don't like farming help him to what he does like, considering he is not merely "only a boy," but one of the forces of nature which the wisest do not understand.—*Exchange.*

A PRETTY STORY.—An exceedingly pretty story is told of a cat which is worthy of being among the notable examples of the almost human intellect in animals that goes by the name of instinct. A cat had been left at the house of a gentleman for a few weeks, during the absence of her owner. The gentleman had not especially noticed her condition, but had a few times broken "house rules," and fed the cat at the table during mealtimes. One morning she came and rubbed against him at breakfast time, and finally touched his hand with her paw. He fed her as before, when she left the room, but soon returned. Without looking at her he reached down to caress her, when she gently laid a wee kitten in his hand which she had brought from the cellar. She seemed greatly pleased at his attention to her little one, and invited him, as well as she could, to the cellar, where he found two others. On his return to the dining-room, she tried to follow him, but he shut her in the cellar. A few days afterward, the mother-cat having apparently deserted her offspring, they were killed, as they were almost dead for want of sustenance. But an investigation soon showed the cause of her unnatural action. By some failure of nature's processes she had not been furnished with the maternal nourishment for her young, and, knowing this, she carried the kitten to the dining-room as the best method that she had of asking that her little family might be otherwise cared for. Her experiment failed, but the charge that she was a cruel mother was withdrawn.

LITTLE THINGS.—Life is made up of little things. He who travels over a continent must go step by step. He who writes books must do it sentence by sentence. He who learns a science must master it fact by fact, and principle after principle. What is the happiness of life made up of? Little courtesies, genial smiles, a friendly lotter, good wishes, and good deeds. One in a million—once in a lifetime—may do a heroic action; but the little things that make up our life come every day and every hour. If we make the little events of life beautiful and good, then is the whole life full of beauty and goodness.

PRESERVING NATURAL FLOWERS.—Flowers can be much better preserved by drying and fastening them on paper than by using gum or paraffine. The flowers should be dried by putting several newspapers between each specimen, and keeping them under a heavy weight until dry; the papers should be changed each day. To prevent insects, a little corrosive sublimate (chloride of mercury) should be added to the paste that is used to paste them to the paper.

HOW CHILDREN SUFFER FROM FEAR.—No pain is more dreadful to endure than fear. Few parents realize how much their children suffer from this cause. "There is nothing to hurt you," is an assurance which does not allay the apprehension. An undefined something, existing often only in the imagination, is the occasion of just as real suffering as a most tangible evil could be. This suffering from fear has much to do with the almost universal dislike which children have of going to bed. They are left alone in some chamber away from the family—a wise arrangement so far as quietness is concerned, and judicious entirely if the child exhibits no fear. But only those who remember what horrors possessed the imagination when they, as children, were left alone in the dark can fully realize the sufferings of a nervous child. "I don't mind your whipping me, father," said a little fellow who had been repeatedly punished for crying when put to bed alone, "if you will only stay with me."

THERE IS NOT A GIRL ON EARTH, whether the daughter of prince or pauper, who, if made a perfect mistress of all household duties, and were thrown into a community wholly unknown, would not rise from one station to another, and eventually become the mistress of her own mansion, while multitudes of young women, placed in positions of ease, elegance, and affluence, but being unfitted to fill them, will as certainly descend from one round of the ladder to another, until at the close of life, they are found where the really competent started from. Mothers of America, if you wish to rid your own and your children's households of the destroying locusts which infect your houses and eat up your substance, take a pride in educating your daughters to be perfect mistresses of every home duty; then, if you leave them without a dollar, be assured they will never lack a warm garment, a bounteous meal, or a cosy roof, nor fail of the respect of any one who knows them.

OVERDRESSING is vulgar, especially in woman, for the glare of the sun-lit and eye-lit street. Toilets, even when tasteful as to color and style, denote, if habitually rich and showy, mental vulgarity, their transparent designs being by superficial, material means, to impress the beholder. The refined beholder is unfavorably impressed suspecting such outward richness to be the mask of inward poverty. A prevalent fashion of costly dressing is a sign of general vulgarity. The finest type of ladyhood would recoil offended from her mirror at seeing herself be-silked and befeathered, and bejeweled, for a morning walk or drive. She will be as simply elegant in her attire, in doors or out, as in her manners, and will not exhibit, either in the one or the other, the slightest effort to outvie her neighbors.

THE following puzzle is said to have been composed by the Bishop of Oxford: I have a trunk with two lids, two caps, two musical instruments, two established measures, and a great number of articles a carpenter cannot dispense with; then I have always about me two fine fish and a great number of small ones, two lofty trees, fine flowers and the fruit of an indigenous plant, two playful animals, and a number of a smaller and less tame breed, a fine stag, some whips without handles, some weapons of warfare, and a number of weatherecks, the steps of a hotel, the House of Commons on the eve of a division, two students or scholars, and some Spanish grandees to wait upon me. Answer—The human body, eyelids, kneecaps, drums of the ear, feet, nails, soles, muscles, palms, tulips, hips, calves, hairs, heart, lashes, arms and blades, veins, insteps, eyes and nose, pupils and tendons.

SILENT MEN.—Washington never made a speech. In the zenith of his fame, he once attempted it and failed, and gave it up confused and abashed. Thomas Jefferson never made a speech. He couldn't do it. Napoleon, whose executive ability is almost without a parallel, said that his greatest difficulty was in finding men of deeds rather than words. When asked how he maintained his influence over his superiors in age and experience, when commander-in-chief of an army in Italy, he said by reserve. The greatness of a man is not measured by the length of his speeches and their number.

If small girls are waifs, are large ones waifs? "Certainly!" says sweet sixteen; "at least the boys have the habit of applying them to their lips in sealing their vows."

Young Folks' Column.

A Faithful Shepherd Boy.

Gerhart was a German shepherd boy, and a noble fellow he was, although he was very poor.

One day while he was watching his flock, which was feeding in a valley on the borders of a forest, a hunter came out of the woods, and asked:

"How far is it to the nearest village?"
"Six miles, sir," replied the boy, "but the road is only a sheep track, and very easy missed."

The hunter looked at the crooked track, and said:

"My lad, I am hungry, tired and thirsty. I have lost my companions, and missed my way. Leave your sheep and show me the road. I will pay you well."

"I cannot leave my sheep, sir," rejoined Gerhart. "They would stray into the forest, and be eaten up by wolves, or stolen by robbers."

"Well, what of that?" queried the hunter. "They are not your sheep. The loss of one or more wouldn't be much to your master, and I'll give you more than you have earned in a whole year."

"I cannot go, sir," rejoined Gerhart, very firmly. "My master pays me for my time, and he trusts me with his sheep. If I were to sell my time which does not belong to me, and the sheep should get lost, it would be the same as if I stole them."

"Well," said the hunter, "will you trust your sheep with me while you go to the village and get some food and drink, and a guide? I will take care of them for you."

The boy shook his head. "The sheep don't know your voice, and"—Gerhart stopped speaking.

"And what! Can't you trust me? Do I look like a dishonest man?" asked the hunter angrily.

"Sir," said the boy, "you tried to make me false to my trust, and wanted me to break my word to my master. How do I know you would keep your word with me?"

The hunter laughed, and he felt the boy had fairly cornered him. He said:

"I see, my lad, that you are a good, faithful boy. I will not forget you. Show me the road, and I will try to make it out myself."

Gerhart now offered the contents of his scrip to the hungry man, who, coarse as it was, ate it gladly. Presently his attendants came up, and then Gerhart to his surprise, found that the hunter was the Grand Duke, who owned all the country around. The Duke was so pleased with the boy's honesty that he sent for him shortly after, and had him educated.

Honesty, truth and fidelity are precious jewels in the character of a child. When they spring from piety they are diamonds, and make the possessor very beautiful, very happy, very honorable, and very useful. May you, my readers, wear them as Gerhart did. Then a greater than a King will adopt you as his children, and you will become princes and princesses royal in the kingdom of God.

KEEP STILL.—Keep still! That's what they always say to us boys. Just as if there never had been any noise in the world until we were born. Haven't old folks all been boys and girls once? Didn't some of them ever get boxed on the ears at school? Didn't some of them drum on milk pans, or crack nuts with the flat-iron, or slam the doors, or come down stairs sidling-down-hill fashion? Everything that is smart goes off with a bang. This would be a dull world if it were not for the racket the boys make. Noisy boys are not always saucy. Some are; but we don't train in that company. We belong to the "Boys' Rattle-te-bang Society of Good Manners," and we invite all our young friends to come in and join us.

LITTLE Mary was recovering from a severe attack of measles and the doctor fearing a relapse was very particular in restraining her motions. Mary did not like him much of course, and one day while washing her hands said sarcastically, looking at her fingers: "Ma, I don't suppose the doctor'll let me have my hands tut, I might tetch cold, you know."

A LITTLE boy inquired at the Augusta (Maine) Post-office, recently, if there was a letter for Chester Pillsbury, and while the clerk was looking for the letter, the little fellow, thinking to help him in his search, said, "He's married now, and I s'pose they put mister onto his name."

DOMESTIC ECONOMY.

New Mode of Washing.

Science is not above giving its attention to even the smallest things, as is shown by an article in the *Moniteur Scientifique* for March, wherein Dr. Queneville describes something new in washing, whereby our linen may be saved from the destructive effects of soda and other washing-powders.

The plan has been extensively adopted in Germany, and introduced into Belgium. The operation consists in dissolving two pounds of soap in about three gallons of water as hot as the hand can bear, and adding to this one tablespoonful of turpentine and three of liquid ammonia; the mixture must then be well stirred, and the linen steeped in it for two or three hours, taking care to cover up the vessel containing them as nearly hermetically as possible. The clothes are afterward washed out and rinsed in the usual way. The soap and water may be reheated and used a second time, but in that case half a tablespoonful of turpentine and a tablespoonful of ammonia must be added. The process is said to cause a great economy of time, labor and fuel. The linen scarcely suffers at all, as there is little necessity for rubbing, and its cleanliness and color are perfect. The ammonia and turpentine, although their detergent action is great, have no injurious effect upon the linen; and while the former evaporates immediately, the smell of the latter is said to disappear entirely during the drying of the clothes.—*Am. Artisan*.

We would add to the above the following from the *Providence Journal*, on the specific use of ammonia for various household purposes:—

Ammonia, or as it is commonly called, spirits of hartshorn, is a powerful alkali, and dissolves grease or dirt with great ease. It has been recommended very highly for domestic purposes. For washing paint, put a teaspoonful in a quart of moderately hot water, dip in a flannel cloth, and then wipe off the woodwork; no scrubbing will be necessary. For taking grease spots from any fabric use the ammonia nearly pure, then lay white blotting-paper over the spot and iron it lightly. In washing lace, put about twelve drops in a pint of warm suds. To clean silver, mix two teaspoonfuls of ammonia in a quart of hot suds. Put in your silver-ware and wash, using an old nail-brush or tooth-brush for the purpose. For cleaning hair-brushes, etc., simply shake the brushes up and down in a mixture of a tablespoonful of ammonia to one pint of hot water; when they are cleansed rinse them in cold water, and stand them in the wind or in a hot place to dry. For washing finger-marks from looking-glasses or windows, put a few drops of ammonia on a moist rag, and make quick work of it. If you wish your house plants to flourish, put a few drops of the spirits in every pint of water used in watering. A teaspoonful will add much to the refreshing effects of the bath. Nothing is better than ammonia water in cleaning the hair. In every case rinse off the ammonia with clear water. To which we would add that, for removing grease spots, a mixture of equal parts of ammonia and alcohol is better than alcohol alone; and for taking out the red stains produced by the strong acids in blue and black clothes, there is nothing better than ammonia.

Economy in the Household.

Mrs. O. T., of Missouri, writes sensibly regarding economy in the house and on the farm. Housekeepers should not go in debt to the storekeepers just because they will trust them for a few months. When one cannot pay for table luxuries, it is not wise to use them three times per day. It is not right to give children tea and coffee just because it may look stingy to outside people, when we know that the children are better off without them. Trying to keep up with the fashions is extravagance on the part of the farmer's wife and daughters, unless wealthy. To dress neatly and comfortably is all that is required. Use more fruits and vegetables. The finest flour is not the best; mix the shorts with the flour and the food is more palatable and healthful. She prepares the mixture as follows:

Take about one-fourth fine flour and three-fourths shorts, raise with yeast and bake on a griddle. The cakes are to be eaten with molasses or butter, or both, the same as buckwheat cakes.

Her letter closes as follows: "It is the duty of every housekeeper to see that nothing goes to waste in or about the house that she can make use of, and it is the duty of every farmer to see that nothing goes to waste on the farm that he can make use of. If we will attend to these things we will get along better and we shall like farm life better. We let too much of labor come to naught."—*Prairie Farmer*.

A RIVAL TO TEA AND COFFEE.—Tea and coffee are threatened with a Brazilian rival, called guarana. The guarana consists of the seeds of a tree known to botanists as the *paullina sorbitis* which is very abundant. The tree produces fruit about the size of a walnut, containing five or six seeds. The seeds are roasted, mixed with water and dried. Before being used they require grinding when they fall into a kind of powder. The active principle is an alkaloid identical with that found in tea or coffee, but there is twice as much of it in guarana as there is in tea. The effects are similar to those of tea and coffee.

Convenient Arrangement of Houses.

It would seem that the adjustment of the rooms is secondary to external appearances, while the reverse is indeed the case. A kitchen should be in an L; that in summer the house need not be heated, and in winter filled with the odor of cooking. The kitchen and living room should have but one door between them, and without passages or steps up or down.

The size of the kitchen should be determined by the uses for which it is designed. For myself, I should prefer to have it small, say twelve feet each way, with a cupboard, sink, cistern pump and painted floor.

The kitchen disposed of, then comes what is scarcely second in importance—the bedrooms. A woman who wishes to concentrate her work as much as possible, will prefer having at least her own sleeping apartment on the ground floor, and opening directly into the living room. And all know that this should be large and well ventilated, with a closet opening into it.

Running up and down stairs is woman-killing work, and should be avoided as much as possible, by having one or more bedrooms below. The living room and parlors can be disposed of according to the taste and means of the builder.

We are annually presented with plans for country cottages, which abound on the outside with ornament, and on the inside with a labyrinth of entries, passages and pantries (pantries and closets are of course necessary). That utility should be sacrificed to ornament is evidently in bad taste, besides being poor economy. If a man's means are not sufficient for both, build substantially, and trust the future for decorating the outside.

A substantial, well proportioned, well kept house, is always a good looking house. But boards placed around the bottom to hide an unsightly opening beneath, with latticed porches and ornamental cornices, is a disgrace to the roadside.—*Ohio Farmer*.

HOW TO CURE HAMS.—Here is J. Howard McHenry's recipe: The meat, after being cut out, must be rubbed, piece by piece, with very finely powdered saltpetre, on the flesh side, and where the leg is cut off; a tablespoonful (not heaped) to each ham, a dessert-spoonful to each shoulder, and about half that quantity to each middling and jowl; this must be rubbed in. Then salt it by packing a thin coating of salt on the flesh side of each piece, say one-half an inch thick; pack the pieces on a scaffolding, or on a floor with strips of plank laid a few inches apart all over it (that is, under the meat); the pieces must be placed skin side down, in the following order: first layer, hams; second, shoulders; third, jowls; fourth, middleings. Take the spare rib out of the middleings. The meat must lie in this wise: Six weeks, if the weather is mild, and eight if very cold, the brine being allowed to run off freely.

ORANGE CHIPS.—Oranges are less used upon the table than they should be. Here is a very good way of serving them up as "orange chips."—Cut your oranges longways, take out all the pulp, and put the rinds into rather strong salt and water for six days, then boil them in a large quantity of spring water until they are tender; take them out, and lay them on a hair sieve to drain, then make a thin syrup of fine loaf-sugar (one pound to one quart of water); put in your peels, and boil them over a slow fire till you see the syrup candy about the pan and peels, then take them out and grate fine sugar over them. Lay them on a hair sieve to drain, and set them in a stove, or before the fire to dry. Lemon chips or candied peel may be made in the same way.

ALL over India, sweetmeats are consumed as a substantial article of food. A native when traveling seldom eats anything else, and between the two great meals, at all times he whiles away the long noon of the Indian summer day by sucking lollipops or candy between the whiffs of his hookah. Large dishes of sweetmeats are very common presents to make on religious festivals or domestic red-letter days; and when a Hindoo wants to be very merry or very dissipated he never gets drunk, but goes to a "millial" shop and makes himself ill with candied sugar.

FOR MIXED PICKLES, prepare any vegetables you like by cutting them in pieces, and let them lie in salt and water for two or three days; then make the pickle in the following manner: Boil the quantity of vinegar required with pepper-corns, mustard-seed, a small quantity of mace, a few Cayenne pods and ginger, and half a pound of flour of mustard mixed smoothly in a basin, to be put in while boiling; put all together in a large stone jar.

RANCID BUTTER may be greatly improved, and made sweet by the following process:—Melt the butter at a tolerably high temperature, in fact, till nearly boiling. Strain clear through cloth, and thoroughly wash with water, to which has been added a little solution of chlorinated soda, or, as it is commonly called, Labarraque's solution. Finally wash with clean water. Butter so manipulated will be sweet and good for cooking purposes; but will not have the flavor of the fresh made article.

FRUIT STAINS.—Fruit stains may, it is said, be removed by moistening the article affected with a solution of hyposulphite of soda, and adding to it a little pulverized tartaric acid, which is to be rubbed on the stain, which will soon begin to disappear, when the article can be cleansed with warm water.

Selected Receipts.

OYSTER PIE.—Cover a well-buttered, deep plate or tin—a soup plate answers perfectly—with puff paste; lay an extra layer around the edge of the plate, and bake it very nearly enough. That done, fill the pie with oysters, seasoning with nutmeg, pepper, salt and butter; dust in a little flour amongst them, and cover all with a thin puff paste. Bake quickly; when the top crust is done the oysters will be done also. If to be eaten hot, serve as soon as baked, as the top crust quickly absorbs the gravy. If to be eaten cold, let it cool untouched, in the plate or pan. It is quite as good in this way as hot, and is excellent for pic-nics or for traveling.

ROLLED JELLY-CAKE.—One cup of sugar, one tablespoonful of butter, one and a half cup of flour, two-thirds of a cup of milk, one egg, two tea-spoonfuls of baking-powder, sifted with the flour. Bake in a large sheet, and when done, spread on the jelly, and cut the sheet in strips three or four inches wide, and roll up. If, instead of jelly, a sauce is made and spread between the layers of the cake, it may be eaten as cream pie, and furnish a very nice and easily prepared dessert.

For the sauce.—Beat together one egg, one teaspoonful of corn-starch, one tablespoonful of flour, and two of sugar. Stir it into a half pint of milk, and boil till it forms a good custard; remove from the fire, and flavor with vanilla.

GREEN PEA SOUP.—Take some young carrots, turpips, onions, celery, and cabbage-lettuces; cut them in slices, and put them in a stew-pan, with a little butter, and some lean ham cut in pieces. Cover them closely, and let them stew for a short time. Fill up with stock sufficient for the soup required, and let it boil until the vegetables are quite soft, adding a few leaves of mint, and the crust of a roll; pound all, and having boiled a quart of peas, as green as you can, strain them off, and pound them also; mix them with the rest of the ingredients, and pass through a sieve. Heat it, and season with salt, pepper, and sugar; add a few young boiled peas, and use the spinach to restore it.

CLEANING GUTTA PERCHA.—This is best done by using a mixture of soap and powdered charcoal, polishing afterwards with a dry cloth with a little of the charcoal on it.

SALAD DRESSING.—This is also excellent over sliced tomatoes in the summer. Take the yolk of one fresh egg and mix with it two tablespoonfuls of olive oil very slowly, add one and one-half spoonfuls of mustard, three spoonfuls of salt, a little pepper, and last of all two spoonfuls of vinegar. Beat the white of the egg to a stiff froth and lightly stir in.

APPLES stewed for sauce should be pared, cored and put into cold water until they are ready to be cooked, to keep them from discoloring. Add a little water, putting them in a porcelain kettle or stew pan. Cover them, and let them cook gently.

LOSS OF WEIGHT IN COOKING.—The loss of weight in a leg of mutton in cooking has been found, by actual experiment to be as follows: Before roasting, the weight was nine pounds and ten ounces; after roasting, six pounds and twelve ounces; weight of cooked meat, four pounds and thirteen ounces; weight of bone, one pound and fifteen ounces; of gravy, ten ounces.

CLARIFYING WATER.—Two grains of alum to a pint of water that is not fit to drink, render it perfectly clear and pure, and the taste of alum will not be perceived. A little pulverized alum thrown into a pail of water, and allowed to stand fifteen minutes, will precipitate all the impurities, and leave it perfectly clear.

TO BROWN POTATOES UNDER MEAT.—Boil some fine, large, mealy potatoes; take off the skins carefully, and about an hour before the meat is cooked put them in the dripping pan, having well dredged them with flour. Before serving drain them from any grease, and serve them up hot.

A MODERN KITCHEN MAID.—Not long since an excellent Kentucky housewife had occasion to send to Louisville for a cook. The latter in a few days put in her appearance, arrayed apparently in a large quantity of cast-off masquerade finery of the Queen of Sheba, dilapidated panniers, flounces, hoops, and with a stunning head-dress that would have befitted the Queen of Hayti—jute curls, frizzles, chignons, and rats in alarming profusion. The former looked at the latter in astonishment, and when sufficiently recovered, she informed her that she did not think she would suit as mistress for the kitchen, as her appearance indicated it would require three-fourths of the day to get up her elaborate head-toilet alone. "Why, la, ma'am, answered Dinah, I never combs my head!"

TOBACCO-CANCERS on the lip and tongue are increasing so alarmingly as to greatly diminish pipe-smoking in Germany. This deadly form of the cancer is incurable. In our country we have a few fearful examples. President Stirling, of the Burlington Bank, N. J., clerk of C. Dodge & Co., Bankers of Philadelphia, and a physician of Sonoma, California, have fallen victims to the cancer of the mouth.

VETERINARY.

Diseases of the Horse.

Acute Founder.

This painful disease is caused by too severe usage of the feet, when not in proper condition to bear it. The foot of the horse—like the feet and hands of a man—become very tender and soft from want of use, when the animal has been long idle. If the horse has been highly fed during his holiday, the tendency to inflammatory attacks is increased thereby. Let such an animal that is full of ambition be drove a day to the top of his mettle, and perhaps urged with the whip by an inconsiderate driver, over a hard, parched road, and if it does not cause acute inflammation of the highly sensitive lamella of the feet, you may consider those feet proof against acute founder. If the animal is barefoot, with the hoofs badly worn by running in a rocky pasture, so much the worse; and if he is tender in the feet from chronic founder, with the above circumstances, thirty to sixty minutes' driving on a hard rough road will be liable to founder him badly, and a frozen, hubby road would not better the case.

Symptoms.

If the case is a severe one the horse will persist in lying down, and tempting food will not induce him to place his weight upon his painfully inflamed feet. He will frequently turn his head towards his side, and show evident symptoms of pain. The feet will be hot and tender; the pulse quickened and wiry; generally little or no appetite. If he is brutally forced to rise, he will gather his hind feet far under him and extend the fore feet forward as far as possible to relieve them of his weight, thus showing more good sense than he who cruelly forced him to rise. In very severe cases the intense inflammation soon separates the hoof from the coronary ligament that secretes the horn, and the blood flows freely from the opening, which partially relieves the intense pain. When it progresses this far the hoof will come off in a short time. The fore feet are most frequently liable to this disease, because of the greater weight they have to carry, especially in horses with contracted feet; yet the hind feet are not exempt from severe attacks. The fleshy plates, or lamella of the feet, that intervenes between the bony structure and the horn, being very sensitive and replete with blood-vessels, are very susceptible to inflammation when roughly used. In such cases there is generally soreness of the muscles and tendons of the leg, such as a person would be likely to have from similar causes, occasionally inflammation of the eyes, and general fever where the horse has been highly fed.

Treatment.

If the animal is valuable call in a veterinary surgeon. If no surgeon is at hand, pour cold water over the eyes (if inflamed), and apply an eye-water every hour composed of 3 gr. sulphate of zinc and 2 gr. sulphate of morphia to 1 oz. of distilled water. Administer gentle physic with cold water injections to move the bowels. Take away all strong heating grain, and substitute green feed, carrots, and bran mash (one, or all, if obtainable). If there is no green feed, let well-cured hay, slightly sprinkled with weak brine, take its place. Rub the sore muscles and tendons with strong brandy or alcohol. Get off the shoes, if it can be done without pain, by filing off the clenches and gently drawing one nail at a time; but better to let them alone than to wrench them off blacksmith fashion. Bandage up the feet and ankles heavily and keep them wet with warm water to soften the heated horn. If the pulse is full and wiry, and the animal in strong condition, bleed freely from the jugular vein, but a pint of blood from the toe of the inflamed foot is better than a bucket full from the vein, but the latter should only be taken by a V. S. Above all, give the sufferer plenty of room and plenty of bed and kind treatment; also fasten a pad or pillow to the under side of his head to prevent his bruising it in paroxysms of pain. If the hoofs come off the only recourse is death or the advice of a surgeon; space will not permit me to say more.

Prevention.

Use your horses with more kindness and better judgment; water and grain has very little to do with the cause; to be noticed hereafter. Next will be diseases of the feet, continued. S. PELTON. San Francisco, May 23, 1872.

The Curse of the Day.

Probably ten thousand able-bodied men in San Francisco work only with sufficient continuity to avert starvation and procure sufficient to make a decent appearance. All around us we hear complaints of the difficulty of obtaining agricultural labor. About the four thousand drinking-saloons of the city are at all times visible groups of men and lads passing their time in drunkenness and idleness. A simple dog fight will bring upon the street a multitude of these bipeds; yet the farmer suffers for want of sufficient help to garner his harvest, and the employed is the giver and not the receiver of a favor. A farmer informed us only a day or two since, that in consequence of inability to hire pickers, the produce of a large strawberry field had gone to waste. Let any one try to procure the immediate performance of almost any kind of work, and he will begin to get an idea of the increasing prevalence of an indisposition to labor. With half-grown lads—lads who are coming up into manhood with no other capital than their muscle—the city swarms. We are sending missionaries to gentle savages, while the courts and alleys of our own city are full of people whose consciences might be quickened if the attempt were made in a proper manner. In San Francisco, by some means or other, a greater multitude of people live only from hand to mouth than in any other city of the same population of which we know. Farmers are offering \$2, \$3 and even \$4 a day for able-bodied men, yet there are thousands of these in San Francisco who would rather starve than exchange the poisoned breath of our courts and alleys for the pure air of the country. —S. F. Rep., May, 30.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, THURS., A. M., June 6.

FLOUR—We note a good local demand with a fair inquiry for export. Sales reported embrace 7,000 bbls. Cal. extra, 5,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$4.87½@5.12½; extra, in sacks, of 195 lbs. \$6.50@6.62½; Oregon brands, \$5.75@6.50 in sacks of 195 lbs.

WHEAT—The market has been quiet at unchanged rates since our last review. Sales aggregate 25,000 sacks fair to choice at \$2.00@2.12½ per 100 lbs. Quotable at close at \$2.00@2.12½ per 100 lbs.

The latest Liverpool market quotations come through at 13s. 10d. @ 13s. per cental.

BARLEY—Market quiet. Sales embrace 11,000 sacks ordinary coast to choice bay, at \$1.40@1.55, which is the range at close.

OATS—Market has been steady during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.65@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.50 per 100 lbs.

CORNMEAL—Is quotable at \$2.00@2.25 per 100 lbs. from the mill.

BUCKWHEAT—Is in moderate supply at \$2.50 per 100 lbs.

RYE—Is quiet at \$2.00@2.15 per 100 lbs.

STRAW—Quotable at \$3.00@3.50 per ton by the cargo.

BRAN—Is selling at \$17@17½ per ton from the mill.

MIDDINGS—For feed, are \$22.50@25 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—Receipts have been light, with a good demand. Prices are nominally \$14.00@22.00 for fair to choice per ton. The best old wheat will bring the latter figure.

HONEY—New is selling at 20@25c in the comb, and 12@16c strained; old in comb 8@15; do strained 8@11c per lb.

POTATOES—The demand is fair. Sales of new at \$1.75@2.00 per 100 lbs; new crop Mission & Half-Moon Bay \$1.75@2.12½, and good Humboldt at 75@85c. per ctn.

HOPS—California are nominal at 70c.

HIDES—During past week 1,570 Cal. dry sold at 18½@19½, and 2,530 salted at 8½@9½c.

WOOL—The market is still very quiet and prices are nominal. Buyers and sellers are still about 5 cents apart in their views and speculators are sending wool East in hopes of getting a market. There is no improvement in the market. Sales aggregate only about 20,000 lbs at 37½@45 for average lots. Nominal rates are 40@45.

TALLOW—Market weak at 8@8½c. per lb. **SEEDS**—Flax 3c.; Canary, 5@6c.; Alfalfa, 16@20c.; Mustard, 3@5c. for the different kinds.

PROVISIONS—California Bacon 13@14½c.; Oregon, 13½@14; Eastern do. 11½@12½ for clear and 11@15 for sugar-cured Breakfast; Cal. Hams 11½@15; Eastern do. 11½@15½c.; California Smoked Beef, 11c. per lb.

BEANS—Market continues firm and the following are jobbing rates: Pea \$4.00@4.25; small White \$4; Small Butter \$3.50, large \$4.00; Bayo, \$1.25; Pink and Red are scarce.

ONIONS—New crop of red selling at \$1.25 per 100 lbs.

NUTS—California Almonds, 8@10c. for

hard and 18@25 for soft shell; Peanuts, 5@8c.; Pecan, 25c. per lb.; Hickory, 12c.; Brazil, 16c.; Chili Walnuts, 15c.; Italian Chestnuts 25c.; Eastern Chestnuts, 15@20c.; French Almonds, 25@30c.; Princess Almonds, 35@40c.; Los Angeles Walnuts, 18c.; Cocoa-nuts, \$10.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8 per lb. do. 2d quality 6@7 per lb.; do. 3d do. 3½@5c.

VEAL—Quotable at 6@10c.

MUTTON—6@6½c. per lb.

LAMB—Easier at 5@9c.

PORK—Undressed grain-fed is quotable at 5½@6c. dressed, grain-fed, 7½@9c. per lb.

POULTRY—Live Turkeys, 25@27c. per lb.; dressed, 28 per lb.; large Hens \$3.50@9.00; Roosters, \$3.00@9.00 per dozen; Spring Chickens, \$1.00@6.00; Ducks, tame, \$7.50@8.00 per doz.; Geese, \$12@15 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, is in free supply and active demand; it may be quoted at 22½@27½c., with a few choice lots at 30; New firkin is quotable at 24@27½c.

CHEESE—New California, 12½@14½c.; Eastern is jobbing at 21@22c. per lb.

Eggs—California fresh, are 27½@30c. per doz.; Eastern 20@22½. Oregon, 25.

LARD—California 12½@13½; Oregon, none in market. Eastern in cases 14@14½c.; do in tes. 11½@12c. per lb.

FRUIT.

Tah. Oranges, M. 16 20 22 24 Currants, 6 8 8
California do. 20 20 20 20 Apples, 2 00 4 30
Limes, M. 20 20 20 20 Pineapples, — — —
Aust. Lemons, M. — — — Strawberries, 8 12 12
Cal. do. M. 20 20 20 20 Gooseberries, 4 5 5
Sicily, do. 13 13 13 13 Cherries, 10 10 10 10
Bananas, bunch 2 50 3 50 Apricots, 12 12 12 30

DRIED FRUIT.

Apples, per lb. 8 10 10 10 Raisins, per lb. 20 20 22 22
Pears, per lb. 9 10 10 10 Black Figs, per lb. 6 6 6 8
Peaches, per lb. 9 10 10 10 White, do. 15 15 15 20
Apricots, per lb. — — —
Plums, per lb. 1 1 1 1

VEGETABLES.

Cabbage, per doz. 50 50 50 50 Cucumbers, per doz. 25 25 25 40
Carrots, per doz. 2 2 2 2 Summer Squash, 1 1 1 1
Rhubarb, per doz. 3 3 3 3 Asparagus, per doz. 6 6 6 7
Green Peas, per doz. 2 2 2 2 Tomatoes, per doz. 6 6 6 7
Sweet Peas, per doz. — — — String Beans, 4 4 4 5

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report an active inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—Burlap sacks 17½@18c.; Flour sacks 9½@10½c. for qrs. and 15@15½c. for hfs. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c.; Hessians 40 inch goods 14@14½c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete. A trade sale of 1,000 cases Eastern and California make will be held at H. M. Newhall's auction rooms, on the 10th and 11th inst.

BUILDING AND FENCING MATERIALS—The demand for lumber is about equal to receipts, and stocks are light. Dealers pay for cargoes of Oregon as follows: Rough \$16; do surfaced at \$25; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine \$35@45; Cedar \$27½@37½. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange.

Puget Sound Pine—
Rough, per M. \$22 50
Fencing and Stepping, per M. 35 00
Fencing, second quality, per M. 25 00
Laths, per M. 3 00
Fencing, per lineal foot. 3c

Redwood—
Rough, per M. 22 50
Rough refuse, per M. 17 00
Rough Pickets, per M. 18 00
Rough Pickets, pointed, per M. 20 00
Fancy Pickets, per M. 30 00
Siding, per M. 25 00
Tongued and Grooved, surfaced, per M. 37 50
Do do refuse, per M. 25 00
Half-inch surfaced, per M. 35 00
Rustic per M. 40 00
Batten per lineal foot. 3c
Shingles per M. 3 00
Sugar Pine is retailing at \$55 for clear and \$15 for second quality.

COFFEE—Costa Rica 20½c.; Guatemala 18c. Java 26c.; Manilla, 19½; Rio 19½@20; Ground Coffee in cases 30c.; Chicory, 12½.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs \$1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice \$1.00 per doz.; Cassia \$1.50; Cloves \$1.12½; Mustard \$1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace \$1.50 per lb.; Ginger 15c per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c. @ 5½, Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, 10@10.50; in kits No. 1 \$2.25@2.50; do No. 2, \$1.75@2.00. Smoked Salmon, 7@7½c per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50, Eastern \$1.75 per ream.

PAINTS—White Lead 8@12½c.; Whitening, 2½c.; Chalk 2c.; Paris White 3c.; Ochre and Venetian Red each 3½; Red lead and Litharge each 10½@11c. per lb.

RICE—Sales of China No. 1 at 7@7½c. and No. 2 at 6½@6¾c. per lb.; Siam, quotable at 5½@6½c. in mats; Carolina Table, 10@11; Hawaiian, 9½@10c. per lb.

SUGAR—We quote Cal. Cnbe at 12½c.; Circle A Crushed, 12½c. and Granulated 12c.; Golden C. 10½@11c.; Hawaiian 8½@10½c. as extremes per lb.

SYRUP—Prices may be given as follows: 57½c in bbls, 60 in hf bbls, and 65c in kegs.

SALT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liverpool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c. and Castile, 13@13½c. per lb.

TEA—We quote Young Hyson at 70c@1.15; Gunpowder, 85@1.15; Imperial, 85c@1.25; Oolong in bulk 40c@1.00, in ½ lb. papers 37½c@1.10; English Breakfast Souchong 45c \$1.00; English Breakfast Congou, 50@85c.; Basket 45@65c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, June 6, 1872	
MISCELLANEOUS.	
Butter, Cal. fr. do.	25 40
do Oregon, lb.	25 40
Honey, per lb.	25 40
Cheese, per lb.	25 40
Eggs, per doz.	40 40
Lard, per lb.	14 20
Sugar, cr., 7 lb.	100 00
do, 10 lb.	9 00
Beet, do.	12 00
Sugar, Map. do.	25 00
Plums, dried, lb.	15 30
Peaches, dried, lb.	20 30
Wool Sacks, new	80 00
Anticord, half doz.	82 85
Wheat, a-sks, 23x36	18 00

PRODUCE, ETC.	
Flour, ex. per bbl.	6 25
Superfine, do.	6 00
Coru Meal, 100 lb.	3 50
Wheat, per 100 lbs.	2 40
Oats, per 100 lbs.	1 60

FRUITS, VEGETABLES, ETC.	
Pine Apples, 1.50	40 00
Bananas, per bunch	50 00
Cal. Walnuts, lb.	20 00
Cranberries, lb.	10 00
Strawberries, lb.	10 00
Cranberries, 0.7	10 00
Gooseberries, lb.	8 00
Cherries, per lb.	10 00
Oranges, per 100 lb.	20 00
Lemons, per 100 lb.	50 00
Limes, per 100 lb.	20 00
Figs, dried, lb.	60 00
Asparagus, lb.	6 00
Artichokes, doz.	10 00
Russell's sprts., 10	12 00
Beets, per doz.	25 00
Potatoes, New York	2 00
Potatoes, sweet, 1/2	50 00
Hares, each	10 00
Cauliflower, 1/2	50 00
Cabbage, per doz.	10 00
Carrots, per doz.	15 00
Celery, per doz.	75 00

POULTRY, GAME, FISH, MEATS, ETC.	
Chickens, apiece	8 1/2 @ 1.00
Turkeys, per lb.	20 00
Ducks, wild, per lb.	25 00
Tame, do., per lb.	25 00
Teal, per doz.	25 00
Geese, wild, pair	10 00
Tame, pair	20 00
Hens, each	75 00
Snipe, per doz.	25 00
English, do.	25 00
Quails, per doz.	10 00
Pigeons, dom. doz.	10 00
Wild, do.	20 00
Hares, each	10 00
Rabbits, tame, 75	10 00
Wild, do. 42 1/2	10 00
Beef, tend, per lb.	18 00
Corned, per lb.	15 00
Ham, Cal. do.	18 00
Pork, rib, etc., lb.	10 00
Chops, do. lb.	15 00
Veal, per lb.	15 00
Cutlet, do.	12 00
Legs, per lb.	15 00
Lamb, per lb.	18 00
Tongues, beef, ca	75 00
Tongues, pig, ca	18 00
Bacon, Cal. do.	16 00
Oregon, do.	18 00
Hams, Cal. do.	16 00
Hams, Cross, a c	25 00

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post St.]

SAN FRANCISCO, Thursday, June 6, 1872.	
SOLE LEATHER—The demand is good, with an advance in Eastern market, which will probably soon be felt here.	
City Tanned Leather, per M.	26 25
San Cruz Leather, per M.	26 25
Country Leather, per M.	25 25
Stockton Leather, per M.	26 25
French skins are firmer with an advance in some grades. Heavy California skins are firm, with an upward tendency.	
Jeod, 11 to 15 Kil, per doz.	72 00 @ 90 00
Jeod, second choice, 11 to 15 Kil, per doz.	60 00 @ 75 00
Lemoine, 16 to 18 Kil, per doz.	75 00 @ 75 00
Levin, 12 and 13 Kil, per doz.	68 00 @ 70 00
Cornellian, 16 Kil, per doz.	60 00 @ 60 00
Cornellian, 12 to 14 Kil, per doz.	60 00 @ 68 00
Ogerau (Calif), per doz.	54 00 @ 54 00
Simon, 18 Kil, per doz.	65 00
Simon, 20 Kil, per doz.	68 00
Simon, 24 Kil, per doz.	70 00
Simon, 24 Kil, 7 and 8 Kil.	35 00 @ 40 00
French Kips, per doz.	1 10 @ 1 30
California Kip, per doz.	60 00 @ 80 00
French Sheep, all colors, per doz.	15 00
Eastern Cal. for Bucking, per doz.	1 15 @ 1 25
Sheep Skins for Topping, all colors, per doz.	9 00 @ 13 00
Sheep Roans for Linings, per doz.	5 50 @ 10 50
California Russet Sheep Linings, per doz.	1 75 @ 5 50
Best Jodot Cal Boot Legs, per pair.	5 25
Good French Cal Boot Legs, per pair.	4 50 @ 5 00
French Cal Boot Legs, per pair.	4 00
Harness Leather, per lb.	30 @ 37 1/2
Fair Bridle Leather, per doz.	48 00 @ 72 00
Skirting Leather, per lb.	34 @ 37 1/2
Welt Leather, per lb.	38 00 @ 50 00
Buff Leather, foot	18 @ 21
Wax Side Leather, per foot.	20 @ 22

The Thresher's Guide.

This new book, by D. Hallihon, a California master thresher, of some fifteen years practice, can be had for \$1, in flexible cloth covers, and \$1.50 in stiff cloth or extra binding, at this office. Postage, 20 cts. Hallihon speaks out plainly and briefly, giving threshers the benefit of his practice and experience freely; exposes many of their mistakes and the abuses of ignorant workers and pretenders. He also shows the farmer how to avoid the wasting of his grain and valuable time in the important season of harvesting.

Containing information of essential interest to harvesters, unattainable elsewhere, save by dear experience, this pioneer hook we believe will be found profitable in the hands of every thresher and grain producer on this Coast, where machine farming is practical to a greater extent than in any other part of the Union.

CLIPPING PAPERS.—To induce further patronage for agricultural papers on this coast, we will hereafter furnish to new subscribers the CALIFORNIA AGRICULTURIST (a \$1.50 monthly), with the PACIFIC RURAL PRESS, for one year for \$4.50. Present subscribers to the RURAL can also receive the AGRICULTURIST for one year by sending us 75 cts. additional to their regular subscription to our paper.

Small Fruits—Continued.

EDITORS PRESS:—Of strawberries—1 have just plowed up two acres, forty kinds, embracing everything that of late has run the gamut of speculation east. I retain only the Longworth Prolific, with a sprinkling of the Triomphe d'Gand. The Longworth, for earliness of season and adaptation to irrigation, and other conditions of soil, climate, etc., added to its great productiveness, rich scarlet color and other good qualities, I opine will not soon be superseded.

The Triomphe d'Gand is a good auxiliary, coming into bearing a little later in the season, and being solidier, may be better for shipping.

Russell's Prolific was a great favorite with me for a year or two, producing heavy crops of large, fine flavored, showy fruit, when cultivated in beds from the runners. But it has not done well in hill cultivation, requiring too much hand work, and to little work with the horse to be remunerative, while the fruit is as cheap as at present. Under other circumstances it would be a favorite still, most congenial of all to my individual palate.

It is worthy of remark that the very variety that is discarded from the list east, should be the staple one here, proving the earliest; and that the earliest there, drop behind on the list here.

The strawberry crop will not be over two-thirds what it was last year, owing to the unfavorable season; and it is to be hoped that there may be an increased demand by another year, so as to require the full measure of a good crop.

I. A. W.

Experimental Gardens, May 25th.

THE STANFORD HORSE.—D. H. Woods of Sacramento, probably the best stock artist on the coast, has just finished two most excellent portraits of this celebrated trotter, one standing, and the other in motion. We understand the Governor is so well pleased with the work, that he intends buying both.

Publications of the Geological Survey of California:

For sale at lowest price by DEWEY & CO., of this office.

GEOLOGY. Vol. I, with 325 pages of text, in royal 8vo form, 81 wood engravings and one steel plate; containing a report of Progress and Synopsis of the Field Work from 1840 to 1861. Price, in cloth, \$5.00. Postage, extra, \$1.00.

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Young and Middle-aged Men and Boys may enter on any week day, and in addition to all the advantages to be enjoyed at any other Business College, have access to the General Lectures and Literary Exercises of the University. Our Diploma is received as conclusive evidence of proficiency by the Bankers, Merchants and business men. 11v3-tf

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Headers, from 10 to 15 feet cut, made by Walter A. Wood at Hoosick Falls, N. Y., with all his improvements, and having also DOANE'S PATENT, ADJUSTABLE REEL. No other Headers have these improvements: Take none but the HAINES' IMPROVED HEADERS made by Wood, especially for California.

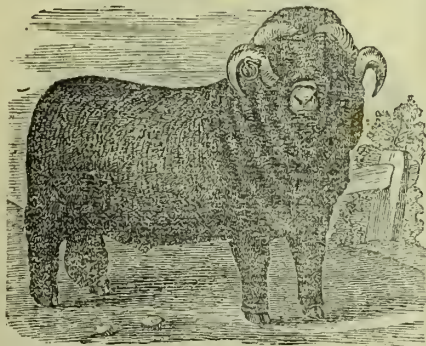
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as IMPROVED is the perfection of the Threshing Machine. We have them from 30 to 40 inch, with NEW FEED TABLE, LARGE SHOE, DOUBLE FAN, ELEVATOR, DOUBLE DISCHARGE, etc., made especially for the wants of California, after years of study. It has greater cleaning capacity than any other, and is EVERY WAY PERFECT. No other machine has ever equalled "The Russell," none can excel it.

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These Rams are guaranteed to be pure blooded French Merino, and I would respectfully call attention to them from those who desire to see or purchase the best and purest of stock. 16v3-6m

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Highest prices paid for Wool.

Wool Graded, Packed and Shipped for Eastern buyers at reasonable terms.

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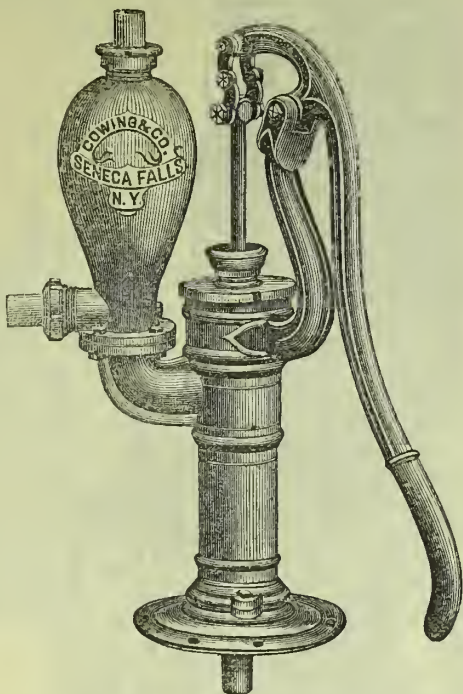
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The above named goods are unequalled for finish by any others in the market, and the prices will compare favorably. For instance, the price of the Three-inch Force PUMP represented in the cut, with air chamber having two outlets, is FIFTEEN DOLLARS. Illustrated Catalogue sent upon application. Pipe cut to any required length, and estimates furnished. 13v3-1am-hp

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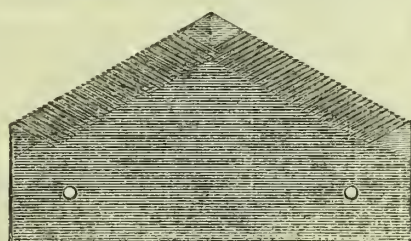
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Receive Consignments of Wool, Sheep Skins, Hides, etc. Liberal advances made to consignors. Keep on hand the best quality of Wool Sacks, Twines, and other supplies. 10v3-3m

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Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England. Also ten Rams, and thirteen Ewes and Lambs, Silurian Sheep. Also five hundred Calves of the best milk stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats. ROBT BECK, secretary State Agricultural Society, Sacramento. 5v3-tf

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THE "VICTORY" FRUIT JAR Is now on its third year of trial, and is found to be the most popular jar ever introduced here. They are packed six dozen in a box, each box containing openers to enable the tops to be easily removed when the fruit is used. See circulars packed in the boxes for directions for putting up fruit.



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SAVE \$40! WHY PAY \$80?

THE IMPROVED Home Shuttle Sewing Machine.

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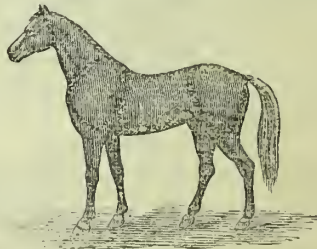
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THE IMPORTED TROTTER STALLION

"NAUBUC."



Foaled in May, 1864, is seven years old, past; BLACK, with a small Star in the Forehead; fifteen hands, two and a half inches high, and weighed when five years old 1,000 pounds; sired by "Toronto Chief," by "Royal George," by "Black Warrior," by "Tippoo," by "Ogden's Messenger," a son of Imported Messenger, who was thoroughbred and out of the celebrated ten-mile trotting mare "Gipsy Queen," bred in Kentucky.

"NAUBUC"

Was bred by Thomas Vail, on Long Island, imported by DR. B. J. SMITH, arriving in San Francisco on the steamer "Colorado," Christmas Eve, 1868.

Terms for the Season:

\$50, Gold Coin, payable at or before the close of the season, July 1st, 1872.

Good pastures will be provided at \$4 per month, with the best of attention, but accidents or escapes at the risk of the owners.

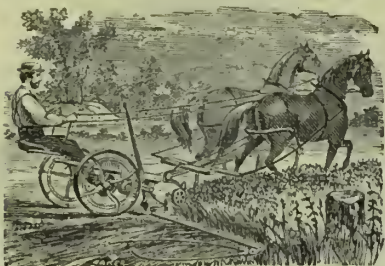
Any gentleman having a trotting mare, with a record of 2:40, or a thoroughbred mare, will be made welcome to the services of "Naubuc" this season.

With the compliments of

DR. BARLOW J. SMITH, 637 California Street, S. F.

The horse is in charge of the experienced groom, NED CUNNINGHAM, at the Naubuc Breeding Farm, San Lorenzo, Alameda County.

Owing to the increased patronage that this horse is receiving, the season will be continued until the 1st of August. 22v3-3wsa



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It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are:

- 1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.
- 2d—It can be run with a STIFF or LIMBER POLE, as desired.
- 3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.
- 4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.
- 5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

FIRST PREMIUMS!

These Plows have taken First Premiums at the State Fair, at the Northern District Fair, at the Upper Sacramento Valley Fair, and the State Agricultural Society Premium of \$40 for the best Gang Plow, after a fair test and competition with the leading Plows of the State.

Champion Deep-Tilling Stubble Plow, Took the First Premium over all competitors at the State Fair, 1871. Furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manner acted and for sale at Marysville by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

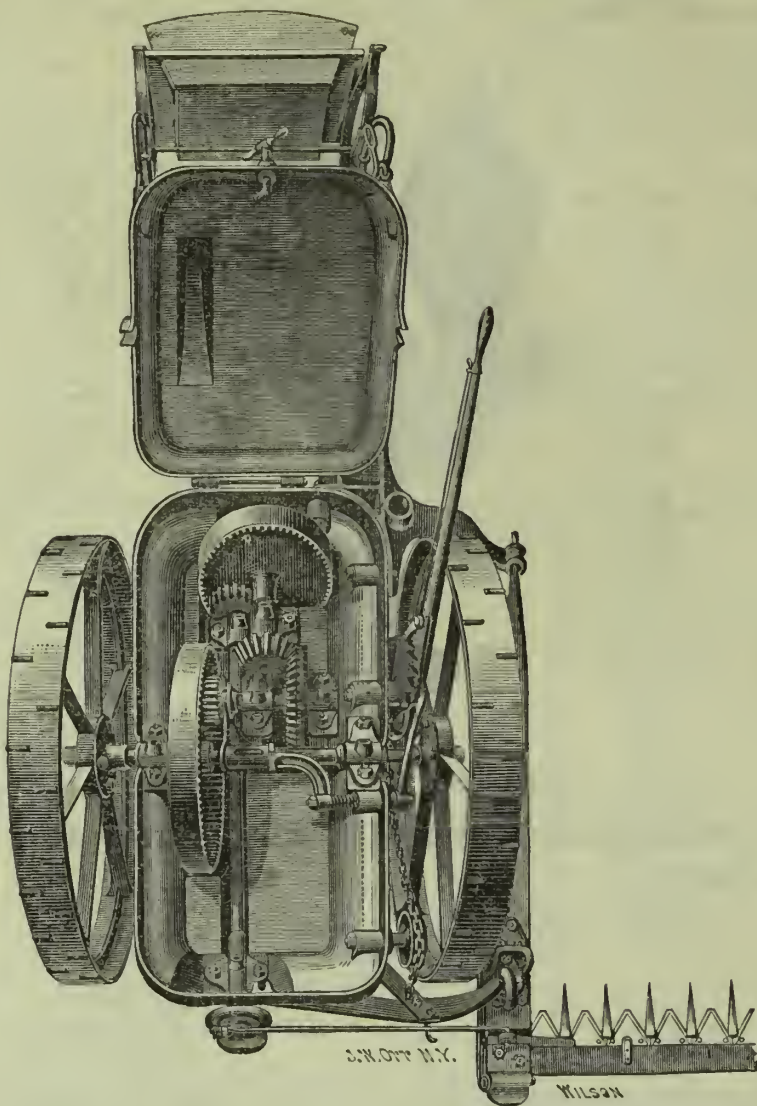
This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

E. J. FRASER, M. D.,
Surgeon and Homeopathic Physician,

No. 102 Stockton street, San Francisco, Cal.
Surgical cases from the country received and treated at the Homeopathic Hospital.
Letters answered promptly.

The World Mower and Reaper.



IT HAS NO EQUAL.

This Machine is the harvest gathering of twenty years' experience in the manufacture of Agricultural Machinery, and takes rank with the PRINTING PRESS, ENGINE-LATHE, and LOCOMOTIVE, in the qualities of PRECISION, STURDINESS and DURABILITY.

ITS FOUNDATION IS A SINGLE PIECE OF SOLID IRON, of shape to resist all possible strains. ITS OARING IS SHAPED TO STANDARD GAUGE, AND EACH COG CUT OUT OF SOLID IRON WITH MATHEMATICAL EXACTNESS. The working parts are all so permanently fixed that they cannot vary, and are fully protected from Water Dust, Grass, and all other causes of disturbance.

By these means we REDUCE FRICTION to the Lowest Point—stop the self-destruction common to all rough-cast machines—avoid BREAKAGES in harvest—secure EASY DRAUGHT and the same DURABILITY which pertains to CUT GEAR in other kinds of machinery. The WORLD has been tested Four Years, in the hands of the most Intelligent and Reliable Farmers in the land, all of whom unite in declaring that, comparatively,

"There is no other Harvester."

For Prices and Complete Information address

LINFORTH, KELLOGG & CO.,

Nos. 3 and 5 Front street, San Francisco.

Importers and Jobbers of Foreign and Domestic Hardware.

SOLE AGENTS FOR THIS COAST FOR

The World Reaper and Mower,

Ball & Co.'s Ohio Reaper and Mower,

Ball & Co.'s Ohio Tornado Thresher,

Woolworth Handle Works—Ax, Pick and Sledge Handles,

Rumsey & Co.'s Lift & Force Pumps,

Enterprise Manufacturing Company—Self-Measuring Molasses Gates, Patent Tap Borers, Coffee Mills, Etc., Etc.;

Leavy Railroad Lantern,

Electric Cross-cut Saws,

Proprietors and Manufacturers of the Gerrish Submerged Force Pump.

12v3 6m

MARCUS C. HAWLEY & CO.,

108 and 110 Front Street, SAN FRANCISCO.

Importers and Dealers in

Hardware and Agricultural Implements

FOR THE HARVEST OF 1872.

Buckeye Mowers,

Buckeye Mowers and Reapers,

Buckeye Mowers—new model

Haines' Genuine Headers,

Sweepstakes Threshers,

Horse Powers.

Hollingsworth Sulky Rakes,

Hay Presses, Seed Drills,

SteamEngines, Etc., Etc.

Also, a full stock of PLOWS, HARNESS, CULTIVATORS, and all kinds of HARVESTING IMPLEMENTS.
Send for Circular giving full description.

MARCUS C. HAWLEY & CO.,

10v3-3m

10 and 12 Pine Street and 108 and 110 Front Street, San Francisco.

"The Head of the Family."

NICHOLS, SHEPARD & CO.,

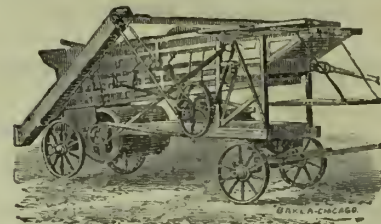
Grain-Saving, Time-Saving, Money-Making

"VIBRATOR" THRESHERS,

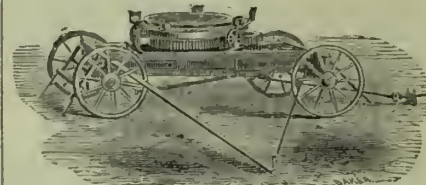
AND THEIR ELEGANT CONVERTIBLE

"Mounted" Horse Powers.

Office and Factory at Battle Creek, Michigan.



Recognized, in the trade and in the field, as the "leading thresher" of the period. FULLY ESTABLISHED through many years of successful use. ENDORSED by more than sixty thousand farmers and grain raisers who have employed and used them. IN USE in eighteen States and four Territories, with largely increasing demand and growing popularity. UNIVERALLY COMMENDED as embodying the only true principle, and pronounced the "coming machine." PREEMINENT for saving grain, saving time, fast work, perfection of cleaning, adaptation to varying conditions of grain, convenience, ease of draft, and ease of management. PECULIARLY ADAPTED to handle Flax, Timothy, Alfalfa and other seeds, so difficult with others. IN DEMAND by grain raisers, at remunerative prices, while neighboring machines are idle. ATTRACTIVE in simplicity of parts, having only four belts and one set of gears. SPECIALLY NOTICEABLE for making no "litter," and requiring no "cleaning up" process after it. ASCERTAINED BY FARMERS to save them the cost of their threshing hills, by the increased saving of grain alone, over and above the heat of others. OBTAINING the "pick" of jobs and extra prices for its work. UNRIVALED in durability, handiness, ease of management, ease of draft, elegant finish, substantial construction.



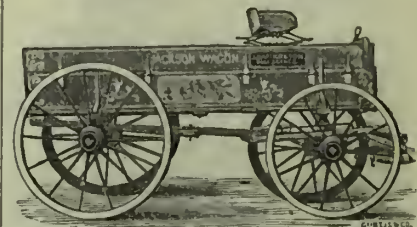
THE ELEGANT "MOUNTED" POWER—mounted on four wheels, where it remains when in operation. ATTRACTIVE FEATURES: securely fastened with two stakes; levers, tumbling rods, etc., carried with it; the "angling" line shaft, by which all short links are avoided in "coupling up;" all boxes, journals, shafts and gears independent of the wood frame; gears "clutch" on; only one key used; convertible to different speeds, at trifling cost, to match other machines; of the lightest draft, very durable, easily and cheaply repaired; sold separately, if desired, and speeded to match other separators or machinery.

ALL PERSONS who think of buying a new Thresher and want the "leading machine," and all farmers who raise grain and want it threshed, saved and cleaned to the best advantage, are cordially invited to send me their address, and receive (FREE) our Illustrated Pamphlet and Circular, containing a full description of these superior machines, with other valuable information.

JOHN NICHOLS,
285 K street, SACRAMENTO.

20v4-2m

Farm Wagons.



JACKSON MICHIGAN WAGONS are known to be the best FARM and TEAM Wagons sold on the PACIFIC COAST. Send for Circulars. The

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others.

Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only; or fitted up with California Racks and Brakes, Spring Seat, etc., or with Eastern double slide-box bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices. N. B.—WARRANTED FOR THREE YEARS.

J. D. ARTHUR & SON.,

Corner California and Davis streets,
SAN FRANCISCO.

17v3eow3m

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest Improved, most Simple and perfect

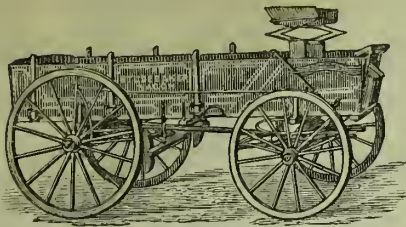
Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine.

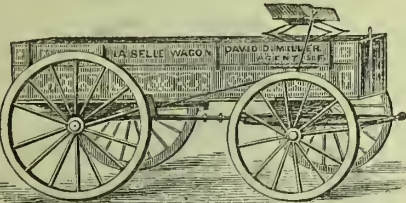
Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S. WYNKOOP & CO., 2064 Ridge Avenue, or P. O. Box 2728, Philadelphia, Pa. 22v3-3m

STUDEBAKER WAGONS

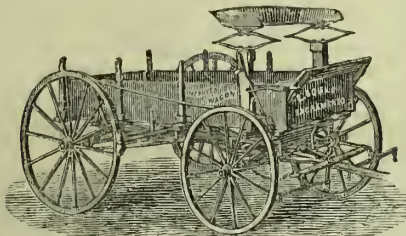


Have become
The Standard Wagons of the Pacific Coast.
For QUALITY,
DURABILITY,
LIGHT RUNNING,
GOOD PROPORTION,
AND EXCELLENT STYLE,
They Have no Peer.
IRON AXLE,
THIMBLE SKEIN,
HEADER AND
SPRING WAGONS.
Of all sizes, with HEAVY TIRES riveted on, always on
hand and sold for \$100 to \$165.
Having established a MANUFACTORY to build WAGONS,
BENS, BRAKES and SEATS, I am better prepared than
ever to furnish
Just the Kinds of Wagons Needed,
As I make a SPECIALTY of the WAGON TRADE.
The attention of DEALERS is especially requested.
Send for CIRCULAR and PRICE LIST.
16v-3m E. E. AMES, General Agent.
Factory and Depot, 217 and 219 K street, SACRAMENTO.

Thimble-Skein Farm Wagons.



JUST RECEIVED FROM
THE CELEBRATED ZUFELT & CO.,
Sheboygan Falls, Wis., established in 1850. Also the
Celebrated La Belle Wagon,
Manufactured by FARNSWORTH, WOODWARD & CO.,
At Fon du Lac, Wis.
PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.
3 in Thimble Skein. \$120 3 in Running Gear. \$90
3 1/2 " " " 125 3 1/2 " " " 95
3 3/4 " " " 130 3 3/4 " " " 100
4 " " " 140 4 " " " 110
Above prices include Box
and Top-Box, Spring-Seat,
Brake, Double and Single-
Trees, Stay Chains, Neck-
Yoke and Wrench. Racks
with California Brakes, in
lieu of Boxes, \$5 additional.
Above prices include
Double and Single-Trees,
Stay Chains, Neck-Yoke
and Wrench.
All sizes of Wagons with Boxes, Brakes and Spring
Seats, or without. All Wagons are manufactured to my
order for this coast, and are warranted for two years in
any climate, and will be delivered on board of any boat
or railroad cars free of expense to the purchaser.
DAVID D. MILLER'S,
IMPORTER AND MANUFACTURER,
715 Market street, near Third,.....San Francisco.
19v4-2m



FIRST PREMIUM AWARDED at the State Fair of
1870; also First Premium at Mechanics' Fair, San Fran-
cisco, 1871; and Silver Medal and First Premium for
best Farm Wagon, and First Premium for the best im-
proved Thimble Skein at State Fair, 1871. Also State
Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,
SACRAMENTO, CAL.

sp22-3m

R. G. BRUSH.

A. M. BURNS.

California Tattersalls.

A. M. BURNS & CO.,

AUCTION AND COMMISSION HOUSE.



Importers and Dealers in
every description of



HORSES, CARRIAGES, HARNESS, ROBES, WHIPS,
ETC.,

N. E. cor. Sansome and Halleck sts., San Francisco.
SALE DAY—Saturday, 11 A. M.
Farmers will find this institution invaluable for dis-
posing of their fine stock.
REFERENCES—C. Adolphe Low & Co.; W. F. Babcock,
of Parrott & Co.; I. Friedlander; Main & Winchester.
Send for Circular. 14v3-3m

AVERILL'S

CHEMICAL PAINT,

Of any desired Shade or Color,

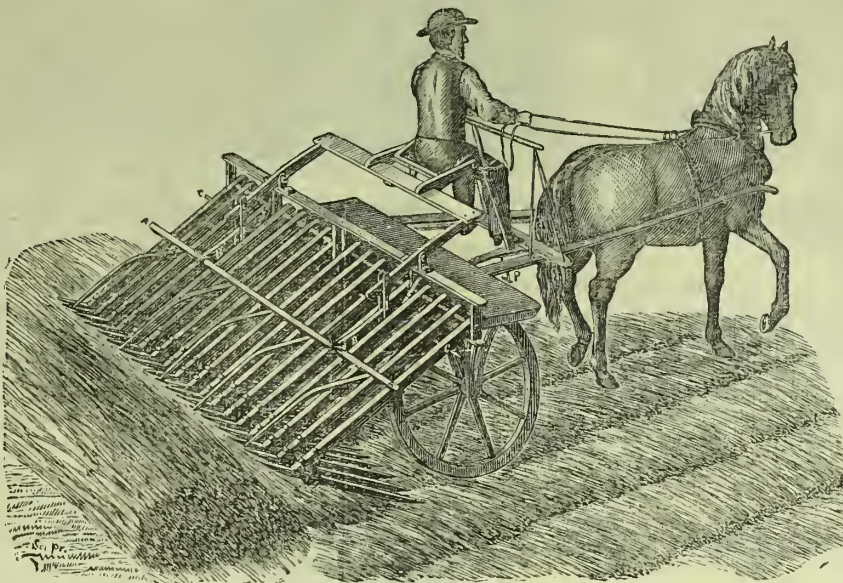
Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic
than the best of any other Paint.

Office, corner Fourth and Townsend streets, San
Francisco. Send for sample card and price list.
15v23-3m HELY & JEWELL, Agents.

BONNEY'S PATENT HAY RAKE.

The only Rake that gathers all the hay upon the roughest as well as upon the smoothest ground,
free from dust and dirt, and does not roll and wad it together. Has extension
teeth to preserve its holding capacity, giving it a very great
advantage over those of stationary teeth.



First Premium at the State Fair. Every Farmer Should Have One

PATENT GRAIN LIFTERS,

For use on Headers in cutting Grain thrown down by the
Wind or Rain.

The Cheapest and Best in the Market.

Are Light, Strong and Durable, and can be adjusted to
run at any inclination to the ground, as at D in cut.
A party can save more than the price of a set additional,
in cutting grain that is down, in one day's run.

Manufactures also Draper Aprons, Grain Carriers, Straw Carriers and Farming Implements generally, all of
the best material and workmanship.
Also, Wool-working Machines, such as Band Saws, Circular and Jig Saws, Shaping Machines, etc.
Improved Pattern of Band Saws, equal to the high priced Eastern Saws in work, at one-half the cost. War-
ranted to give satisfaction.

All orders to

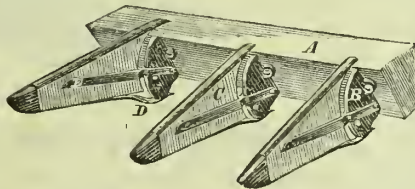
O. BONNEY, Jr., 221 Mission Street, San Francisco,

Promptly attended to.

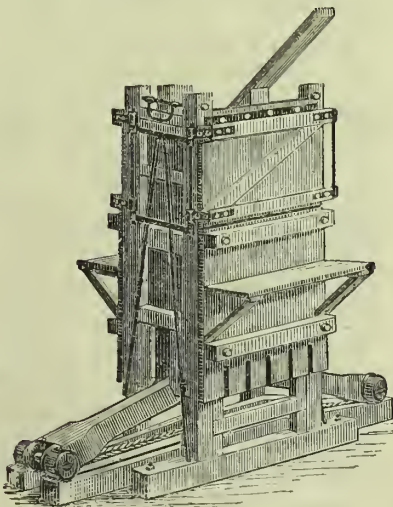
State and County Rights for Grain Lifter sold by
8v3-1am6m

WIESTER & CO.,

No. 17 New Montgomery street (under Grand Hotel), San Francisco.



THE EAGLE HAY PRESS.



The above is a correct representation of this remarkable

Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAI, OF ILLI-
NOIS, TO WHOM LETTERS PATENT WERE
ISSUED JANUARY 10TH, 1865,
AND JULY 24TH, 1866.

Several years were devoted by the patentee to the per-
fection of this powerful press, and its unprecedented
sale in the East induces the proprietors to introduce it
into California and the Pacific States.

All who have seen or used these Presses pronounce
them superior to anything used heretofore. The power
is applied by means of two levers, and it will be seen
the power increases in ratio to the resistance; as the
levers approach a horizontal position the power can
scarcely be estimated. It is not only a powerful Press,
but has the advantage of being Cheap, and also Simple,
therefore not liable to get out of order.

Three men with one horse can bale from Ten to Fif-
teen Tons per Day, each bale weighing 250 to 300 lbs. It
obviates all necessity by beating the hay before press-
ing. On account of its great power, it is well adapted
for pressing Hydes, Rags, Wool or Cotton. When a bale
is pressed and fastened, the follower runs down of its
own weight, and the bales can be taken out on either
side.

These Presses are now manufactured in San Francisco
by the

Kimball Car and Carriage
MANUFACTURING COMPANY,

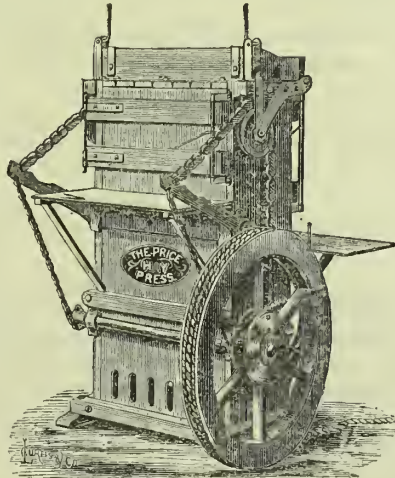
Who are the proprietors on the Pacific Coast, and will
endeavor to have a supply constantly on hand.

Every Press made by them is WARRANTED to give
satisfaction. Agents wanted.

PRICE, \$250.

18v3-3m

THE PRICE HAY PRESS.



(Sometimes called the Petaluma Press.)

Bales twice as fast as any other in the world.

Frequently bales over

Twenty Tons Per Day.

NEARLY 300 IN USE IN THIS STATE.

Eight years' use, and the sale of three hundred ma-
chines on the Pacific Coast in competition with the best
Eastern baling presses, has proven this to be the most
Extraordinary and Successful Machine of its Class ever
invented. For the past six years it has baled nearly
nine-tenths of the hay west of the Rocky Mountains.

Their wonderful capacity is due chiefly to the fact
that they are not set up on stilts, with the machinery in
the bottom, like every other Power Press in the United
States, but the box for the reception of hay extends from
the top of the Press clear down to the ground, thus giv-
ing room in a low, small Press, for a large bale.

DESCRIPTION AND PRICE LIST.

SIZE AND QUALITY.	HIGHT OF PRESS	WEIGHT OF BALE.	WEIGHT OF PRESS.	AVERAGE CAPACITY PER DAY.	PRICE AT SAN FRAN.
No.1,Hardwood door timbers..	7 feet.	200 lbs.	2000 lbs.	13 tons.	\$300
No.2,Hardwood door timbers..	8 feet.	250 lbs.	2400 lbs.	15 tons.	\$400
No.3,nearly all hard wood....	8 feet.	250 lbs.	2600 lbs.	15 tons.	\$450
No.4,nearly all hard wood....	8 ft. 8 in.	300 lbs.	3000 lbs.	17 tons.	\$500

These Machines are sold without DISCOUNT,
and for CASH ONLY.

Address the

PRICE PRESS COMPANY,

In care of I. J. Truman, 1/ Front St., San Francisco,
Or C. H. Hubbard, 9 J St., Sacramento.
Send for Circular. 16v3-4f

KELSEY'S NURSERIES.



OAKLAND.

Established in 1852.

CITY DEPOT,

317 Washington Street.....SAN FRANCISCO.

The Proprietor having upwards of

100 ACRES OF NURSERY GROUNDS,
well stocked with all the leading and best varieties of
Fruit Trees and Fruit Bushes; also Evergreen and De-
ciduous Trees and Shrubs, including the rarest of Coni-
fers, can fill all orders on the most reasonable terms
and with dispatch.

Choice Roses and Pot Plants
of every variety. Trees and Plants securely packed to
travel any distance.

FOREST TREES

of Australia, Europe, China and Japan; in fact, we aim
to have and to get all and everything desirable.

Parties planting can find in this establishment what-
ever may be wanted, for use and beauty, in furnishing a
place without being obliged to go from one Nursery to
another.
W. F. KELSEY, Proprietor.
12v3-3m

1857. SEEDS. 1872.

15 Years Established.

W. R. STRONG,

8 and 10 J street.....SACRAMENTO.

Garden, Flower, Field, Fruit, Tree and Shrub,
Grass and Clover Seeds,
Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United
States at 8 cents per pound.
My annual catalogue is ready and will be forwarded
on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wil-
coxson and others of the most careful and reliable pro-
ducers.

Kentucky Blue Grass, Red Top Timothy, Red and
White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolife, Climax, Excelsior and
other of the best tested varieties. An Eastern Agricul-
turalist offers \$1,000 for a potato superior to the Excel-
sior in good qualities.

W. R. STRONG,

8 and 10 J Street, Sacramento.

THE OLD

Maple Leaf Nursery.

Has constant
varieties of
ORNAMENT-
GREEN and
SHRUBS; also
ment of Choice
merous to
Green House
ers and Bulbs,
and Flower Seeds
of all kinds, are for sale by



ly on hand all
FRUIT AND
AL EVER-
DECIDUOUS
a large assort-
ROSES too nu-
merous to men-
tion. Plants, Flow-
ers, Garden, Grass

L. M. NEWSOM, Proprietor,
Washington street, Brooklyn, Cal.

H. K. CUMMINGS.
1858.

J. M. MAXWELL
1871.

HENRY K. CUMMINGS & CO.,

Wholesale Fruit and Produce Commission
House,

ESTABLISHED 1858.

415 and 417 Davis street, cor. of Oregon, San Francisco

Our business being exclusively Commission, we have
no interests that will conflict with those of the producer.
4v23-1y

THE CELEBRATED

"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the
RUBBER CORK, it can safely be kept for months with-
out losing any of its healing properties.

No Farmer, Teamster, Liveryman or
STOCK DEALER should be without it. It will remove
Calous Lumps, Splints, Wind Galls and Spavins.
Sweeney, Stiff Joints and Contracted L aders readily
yield to its penetrating qualities.
COLIC has lost its sting. The

H. H. H.

Will Cure in Fifteen Minutes.

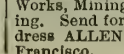
It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors,
Stockton, Cal.

WILCOX'S

IMPROVED STEAM WATER LIFTER,
With neither Engine, Piston, or Plunger.

The most Simple, Durable, and in al
respects the most ECONOMICAL of all
Steam Pumps. Uses the same steam
twice instead of once. Any person can
run it. They are used on the Central
and Western Pacific R.R. from Oakland
to Ogden. They are used for Water
Works, Mining, Irrigation, and all other ordinary pump-
ing. Send for Descriptive Circular and Price List. Ad-
dress ALLEN WILCOX, No. 21 Fremont street, San
Francisco. 16v2-3m



The Pacific Rural Press.

THE PACIFIC RURAL PRESS is now in its third volume. Its columns contain a large amount of original information upon the different branches of husbandry on this coast. Its great variety of contents is properly systemized for the convenience of the reader, and ably prepared in pleasing language and style. Each number contains something of rare interest to every member of the household.

The state of this new field of agriculture, so different from all others; the new and improved methods of farming necessary here; and the absence of any published record of farming and rural experience on this coast, form a combination of circumstances which render a really good journal of greater importance to farmers here than are similar issues to farmers in any other part of the world.

The PACIFIC RURAL PRESS has been heartily received and well patronized, and its liberal success enables us to improve and enrich its columns from month to month.

Its reading and advertising matter is entirely chaste. All farmers should subscribe without delay. Every household should enjoy its richly filled pages.

Subscription, in advance, \$4 a year. Single copies 10 cts. Four single copies, of late dates, sent postpaid for 25 cts. Address

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Publishers, No. 338 Montgomery street, S. F.

ONE DOLLAR A YEAR

— FOR THE —

PACIFIC COAST

Mercantile Director.

This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

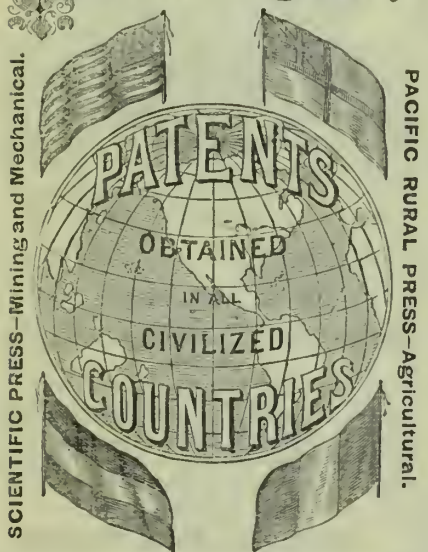
OUR TABLE OF CONTENTS

Will comprise Full Prices Current and Monthly Review of the Wholesale Markets; Diagrams of the Fluctuations of the Produce Markets; Rates of Freight and Passenger Fares—corrected monthly; Illustrations and Sketches of Prominent Men and Buildings; Editorials on Manufacturing and Industrial Progress; Departments containing appropriate reading matter and reviews for various branches of trade, including "Grocery and Provision;" "Dry Goods;" "Trades and Manufactures," etc., etc.

Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, \$1. Subscribers to the SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

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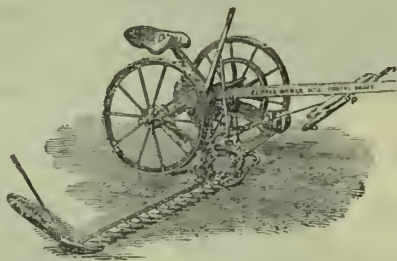
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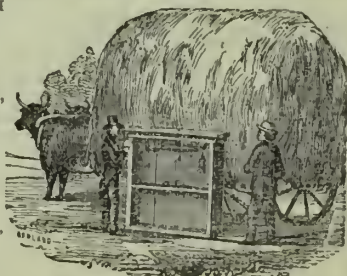
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Volume III.]

SAN FRANCISCO, SATURDAY, JUNE 15, 1872.

[Number 24.]

El Espirito Santo.

In 1826, Henry Barnard, Esq., then residing in Truxillo, Peru, sent to Richard Harrison, Esq., of Liverpool, England, the bulb of a remarkable parasitical, orchidaceous plant, which he had found in the neighborhood of Panama, where it was looked upon with much consideration, and known as *El Espirito Santo*—the Holy Spirit; but which had never been seen in the conservatories of Europe. The bulb was properly cared for, and soon began to put forth leaves, but leaves only, until 1831, when it shot up its first flower stem, which sprang from the base of the bulb, while its leaves grew from the summit.

It was not until the blossom appeared that the significance of its local name was apparent. When the flower had fully opened, a most singular and beautiful appearance was presented. The fructifying column in the center of the flower, with its surmounting anther and the projecting glands of pollen-masses were observed to present a striking resemblance to a dove—the emblem of the third person in the Holy Trinity. Hence the name, *El Espirito Santo*—the Holy Spirit—was reverentially applied by the native residents, from the same religious feeling which had prompted the name of the "passion flower."

The form of a dove assumed by the parts of this flower, as described above, are remarkably true to nature. The breast, the extended wings, the head and beak, and even two purple dots for the eyes, are all distinctly shown, and almost as true to nature as the art of man can depict them.

Owing to the great heat required by this plant, and its peculiarly delicate construction, it has been found very difficult to cultivate it, artificially, away from its native region, which is comprised within the central portion of the torrid zone of the Western Continent.

Some two or three years since, as Mr. Shuman, the chief florist at Woodward's Gardens was crossing the Isthmus of Panama, he took the opportunity to make a collection of some of the most characteristic tropical plants obtainable in that locality, and among others was a specimen of the *Espirito Santo*, which still occupies the portion of the native wood upon which it was found—for it is a semi-parasitical plant. Under the excellent care and management of Mr. Shuman, with the very superior facilities furnished by Mr. Woodward, the proprietor of the gardens for the cultivation of tropical plants, this specimen, after continuing in vigorous growth for two years, threw up its first flower stem which was duly covered with a most gorgeous show of flowers. It subsequently bloomed a second time, last fall.

Both the flowers and leaves, with the distinctive dove representation within the center of one of the flowers is shown in the accompanying illustration, which has been engraved from a photograph taken of the same while at the height of its show. The bulb, from the tops of which the leaves grow and from the base of which the flower stem springs, is not shown; but the leaves, flowers and upper portion of the flower stalk is distinctly shown.

Five leaves spring from each bulb, from twenty to thirty inches in length, by five or six in breadth—lanceolate in form. The flower stem grows from three to four feet in height, bearing upon its summit a spike of globose, fleshy, yellowish-white flowers, yielding a very peculiar and delicate perfume.

The flowering of this plant attracted much attention and a large number of visitors to the

gardens last season. It is expected that it will flower again this season. A carefully prepared representation of the flower was made in wax, at the time, by Mrs. A. O. Cook, of 304 Mason street, which may be seen in a small vase just to the left of the front entrance to the rotunda museum. Copies of the same have also been made, and are in possession of several persons in the city. In its native clime, (Central America) this plant blooms just at the commencement of the rainy season, and, of course, just after its annual period of rest. The flowers hold on about one month. It is now known to botanists as *Peristeria alata*, and is figured in vol. 5, (new series) of *Curtis' Botanical Magazine*, (No. of Engraving 3,115). The plant belongs to the order of *Orchidaceae*, a class of plants of wide distribution, occupying in some of its varieties almost every portion of the earth from the equator to almost the extreme



ESPIRITO SANTO—HOLY SPIRIT FLOWER.

northern and southern limits of the poles. It is only, however, as we approach the equator that the varieties of this plant assume peculiar or beautiful forms. There, owing to the peculiar condition of the column, the anther containing the pollen, and the often remarkable development of some one or more of the inner leaves or petals into unusual forms, the flowers frequently take the most singular and sometimes beautiful or fantastic forms. An insect, or a spider, a butterfly, etc., sometimes a bird, as in the *peristeria alata*, not unfrequently a reptile, and sometimes a helmet with visor closed or raised, and often other singular and most beautiful forms are seen.

Sometimes there is a peculiar sensibility connected with the flower, which makes it a most effective insect trap, so hinged that it immediately entraps and holds fast any insect which may alight upon it, when its size is sufficient to enclose such intruder.

The particular specimen at Woodward's and which is herewith figured, is a pseudo-bulbous epiphyte plant—having the appearance of a bulb, but not a real bulb, and growing upon other plants but not penetrating their substance, nor absorbing their juices, as is the case with a

real parasite. This variety is also sometimes found growing upon rocks or upon the earth, generally choosing dry, hilly localities. It grows well artificially in turfy peat or rotten wood. It is thus kept at Woodward's, where it is seen in a rustic hanging basket.

Nutritious Qualities of Butter and Cheese.

There is a great difference of opinion in regard to the comparative nutritive qualities of butter and cheese. There are many consumers who, without giving any good reason, hold to the opinion that butter is more nutritious than cheese—that cheese is merely an article of luxury not to be classed among the necessary economical articles of food.

Prof. Liebig considers this a great mistake, and one in which the English laborer, obliged to economize in his food, has long since discovered. He often lives months without any other animal food than cheese. He endures the most exhaustive labor on bread, cheese and ale.

Americans have very little conception of the vast consumption of cheese in Great Britain, both of home and American manufacture, by all classes, the rich as well as the poor. And this assumption of its utility as a strengthening food, is, without doubt, formed upon correct principles of health, nutrition and economy.

Liebig asserts that the nitrogenized foods are the real elements of nutrition; they are vegetable fibrin, albumen, casein—the leading constituent in cheese—animal flesh and blood. That it has been found by experiment that the non-nitrogenized foods as gum, sugar, starch, fats and butter, cannot alone preserve the life of animals, but are nevertheless essential to health.

It will be seen therefore that casein or cheese, is the chief nitrogenized substance of milk, and is highly nutritious, and that it is from this source that the development of the tissues is effected in young animals that feed upon it.

Prof. Johnson states that a pound of cheese is more nutritive than two pounds of beef, and as it contains no bones and scarcely any waste, and is readily substituted for meat, always ready for the table, requiring no cooking, easily transported, and preserved for long periods, a healthy as well as useful article of food, it deserves to enter very largely into the consumption of a people.

When we can begin rightly to understand that a pound of fine cheese instead of being a luxury, is at the same time twice as nutritious as an equal weight of steak, we will begin to understand what the English already know, that its use is economical, and that its manufacture deserves the utmost attention that our people can give.

ESSAY BY A FARMER AND ORCHARDIST.—Mr. J. V. Webster, of Fruit Vale, will deliver an essay before the Oakland Farming, Horticultural and Industrial Club, on Friday evening, June 14th, at the chemical lecture room of the State University. The subject for discussion by the Club will be "Rust in Wheat." The association has now over thirty-five members, including a fair number of ladies. The meetings are well attended by visitors.

As surely as "a man is known by the company he keeps," so surely is the character of a rural population judged by the appearance of their homes. A thrifty, intelligent people will have neat, appropriate, attractive homes. Nomadic tribes dwell in tents.

Tule Plowing—A New Invention.

The tule gang plow of Mr. McCall, of Santa Clara Co., has been practically at work at the upper end of Puget Slough, Old River, west side of the San Joaquin, some sixteen miles east of Antioch.

There are six plows formed of sheet iron or steel, gouge shaped, and set so as to hold themselves down to the work, while the wheels of the machine prevents them from going too deep. The plows cut the soil in continuous ribbons, about two inches deep and several wide, turning some wholly, and some only partially over.

The wheat seeds are dropped so as to be covered by this process. There is no question about its springing up, the cut sods acting as a protecting mulch. The possible difficulty anticipated, if any, in this mode of culture, will be the springing up of the grass also through the sod, and its disputing the possession of the ground with the grain.

Mr. Sherman Day, our witness of this information, said the plow seemed to do the work intended very well, cutting and turning down a growth of tules, in some places some four feet high, without previous preparation. The grass sod cut forms a sort of peat.

Two four horse teams were worked, plowing two and one-half acres each a day, as estimated, the cuts being one-half mile long.

A patent has been applied for by Mr. McCall on his plow through the SCIENTIFIC PRESS office. With improved implements, and a more thorough knowledge of our tule lands, and the capacities of the soil and climate, they are constantly gaining in fame and importance in our community.

Wool Waste.

In our wool article last week, we dared to speak of the dirt and filth of California wools, as being in the main almost unequaled by any other country's wools. We gave the per cent. of loss as equal to 30, and in some cases even 40 per cent. of the actual weight of wools, as received and paid for at the depots of our wool brokers.

We have since been informed by one of the largest wool commission merchants of San Francisco, that we were altogether "wide of the mark;" that instead of 30 or 40 per cent. waste, it actually ranges from 65 to 70 per cent. of the weight of wool received. This per cent. includes the natural oil of the fleece, with the dirt, filth and burr, or all impurities, apart from the clean pure wool ready for manufacture.

From an Eastern buyer now here, we learn that even on Ohio wools, washed before shearing, the average loss is estimated at 45 per cent., before it is ready to be worked into cloth or other fabric. It would seem from this, that there is some cause for the complaints made in regard to the bad condition generally of California wools, as received from the producers.

That there are exceptions, we know; some clips from the middle and northern parts of the State, commanding to-day ten cents per pound more than certain other clips from other districts. We repeat therefore our remark in our last week's issue, that we hope our wool growers will take warning and make more determined efforts hereafter, to put their wools upon the market in better condition than ever before, and thus secure nearer their full value.

The mere sentiment of home, with its thousand associations, has, like an anchor, saved many a man from shipwreck in the storms of life.

CORRESPONDENCE.

Sensations by the Way.—Sonoma Co.

[From Our Travelling Agent—No. 1].

From San Francisco to Petaluma, by boat and rail, or by the opposition steamer "Petaluma," is forty-five miles—fare \$1—kept at that figure by the opposition; people all recognize the advantages of opposition, although they do not patronize it in this case as they should. Petaluma, a thriving city of about 3,000 inhabitants, is located on the creek of the same name, and is the outlet of all the country above on the north in Sonoma county, and a portion of Marin county on the south and west.

A part of the business portion of the town was burned down a few months since, but the old buildings are now being replaced by new, much finer, and more substantial ones. The people complain that the railroad recently completed from that point to Cloverdale, has injured their business considerably, by making the terminus at Donahue, a town in embryo eight miles nearer tide water. Still her streets present a lively appearance, especially on Saturdays, when the farmers come to town.

From Petaluma to Santa Rosa is sixteen miles by rail, passing through the Petaluma and Santa Rosa valleys. Petaluma valley proper is low land, very rich adobe soil, but mostly devoted to stock grazing, being too wet for farming purposes during a large portion of the year. By the expenditure of a comparatively small sum, it could be made one of the finest agricultural districts in the State.

Valuable Ranches.

Around the foothills, however, on either side, extending to the tops of the hills, are numerous ranches, owned and farmed by solid men, who raise immense crops almost every year, and grow wealthy in proportion. This year, which is universally conceded to be the poorest season for years, we saw tracts of hay land covering thirty to forty acres, which would average three tons of hay to the acre. Mr. A. Clark, near the Cotate Rancho is mowing a forty-acre lot, a large portion of it cutting five tons to the acre. The grain crop however, is generally short this year, in many places hardly paying to cut for hay.

Santa Rosa.

The county seat of Sonoma county, has just obtained a city charter. It is a growing town of 2,500 inhabitants, finely located on level land, the business portion being built around a large square or plaza—Spanish style. Numerous elegant private residences are sprinkled through the suburbs, many of our wealthy San Francisco men having their country residences there. From Santa Rosa, over a low divide, to Healdsburg, situated on Russian River, is 16 miles through a fine farming country, the crops being better as we near Cloverdale, where they seem to be doing finely as a general thing.

From Healdsburg to Cloverdale the railroad is not yet sufficiently ballasted, so we make very slow time, consuming over an hour in running 17 miles. Cloverdale has the reputation, and I should say it is deserved, of being the roughest town in Sonoma county. A small town, surrounded on every side by hills, with a population of from 200 to 300, it is growing rapidly, being the terminus of the S. F. & N. P. R. R., and the outlet of a portion of Lake and Mendocino counties.

A Free Fight.

During my short stay there, I noticed men laying around the streets overpowered by liquor, and saw several free fights. A few days before there was a fight between the Deputy Sheriff and others in regard to the division of a reward for the capture of some stage robbers, in which pistols were freely used. One of the combatants had a narrow escape, a bullet passing through his hat, another piercing his belt. A second

wounded, and they all became demoralized, and wound up by getting one another bound over to keep the peace.

From Cloverdale by a rough and mountainous, but well graded road, it is twenty-five miles to Kelseyville, a small village in Lake county. On reaching the summit, one of the finest panoramas in the world greets the eye.

A Beautiful Lake.

From an altitude of over 2,000 feet we see at our feet the lake nestling in the valley, surrounded by green fields, groves of trees and chaparral, dotted with snowy farmhouses. Beyond, in the far distance, the snow-capped mountains of Colusa county, 100 miles distant. Clear Lake is from thirty to forty miles long and ten to fifteen wide, although from the distance it appears less than half the size. Its average depth is thirty feet. It abounds in fish of all sizes, some of them very large. Game of various kinds abound. The woods are the hiding places of large numbers of deer—with here and there a bear for variety. Numerous springs, mineral and medicinal, abound.

Natural Soda Fountain.

On the edge of the lake, in fact almost a part of it, is a natural soda fountain, the best soda water I ever drank. It only required a silver handled goblet and a fountain of syrup to imagine myself at the soda fountain on Montgomery street. The springs are taken up, and new ones opened weekly for watering places. It merely requires a little advertising, and a line of busses from the railroad, to crowd them with city visitors. Lake county abounds in watering places.

There is hardly a spot in this county but what there is a public summer resort, and medicinal (so-called) spring within a radius of five miles. The worse the water tastes the greater the celebrity, and the better for the pockets of the proprietor. However, the water as a rule throughout the county is very fine.

Every House a Hotel.

Nearly every house on the main roads between Lakeport (the county seat) and Cloverdale, on the west, and Calistoga on the south, respectively the terminus of the S. F. & N. P. R. R., and the Napa Valley R. R., is to all intents and purposes a hotel.

The travel is very great in the summer season, thousands of people coming up from San Francisco and other points, to spend a few weeks in country exercise and relaxation from business. In fact the only money in the country this year appears to be what is brought there by tourists. The crops throughout Lake county, are almost a failure so far this year. Large areas of country look almost as bare as though they had never been planted. Therefore business is dull, and the people feel poor and desponding. However with few exceptions they look for a better season next year, and struggle along manfully.

A Wild Country.

From Kelseyville to Calistoga, Napa county, is forty miles over a wild looking country. There are several sawmills located on small streams on the road; the country being heavily timbered in places. One or two valleys, or, strictly speaking, low places in the hills, for they are on the tops of the mountains, gives an excuse to settlers for taking up, and farming a portion of the land, and most of it is held at a high figure, especially good timber land.

Around Middletown the country is more open and level, and farmed extensively, the crops, as a general thing, giving promise of doing finely this year. The climate is most too severe for growing fruit with great success—but both the climate and soil are well adapted to cereals. Leaving Middletown, we begin to climb the divide separating us from Napa Valley and Calistoga. Near the summit we find the toll-house; the third one on the road from Kelseyville to Calistoga.

An Onerous Tax.

The residents along the road complain bitterly that they have paid taxes to build it, and now pay no less than three tolls in passing over it. It does look rather bad, but the gate-keeper informed me that the road was not yet entirely paid for, and, as soon as free from debt, would be opened to the public. From the top of the mountain we have a fine view of Calistoga and vicinity situated in a small valley surrounded by mountains—Calistoga is at present the northern terminus of the N. V. R. R. and one of the most popular watering places on the coast. Our business not permitting us to visit the place, we will leave it until another time.

J. B. WOODBURY.

Weather and Crops of San Joaquin Valley.

EDITORS RURAL PRESS:—Much to our regret, we have to record the fact that May has passed without favoring our locality with rain, as is seen from the accompanying

RESULT OF OBSERVATIONS NEAR TURLOCK, JUNE 1ST.

1872.	Average Temperature.				Highest Temp.	Lowest Temp.	Rain, Inches.
	7 A.M.	2 P.M.	9 P.M.	Mo.			
January	40.20	52.30	46.15	46.21	61	27	2.38
February	44.68	59.11	49.28	51.16	67	34	2.42
March	46.16	63.61	50.40	53.38	70	36	1.45
April	48.21	66.40	50.80	55.13	77	36	0.87
May	56.45	78.39	58.65	64.44	90	40	0.00

A few drops of rain fell (the 12th), but not enough to measure. This occurred, also, in May, 1870, although in '69, we had 0.65 of an inch, and in '71, 0.46. Dr. Logan's table for Sacramento, shows that but twice since '49 have they failed to have enough rain there in May to make quite a refreshing shower. Those years were '57 and '67, when he records a mere sprinkle. Indeed, his table shows that May has passed only five times in twenty-one years with less than a quarter of an inch.

As it is, portions of our valley were visited by

Partial Rains.

In the first half of May, there were rains south and east of us, in the latter part, to the northward. On the 11th, more than half an inch of rain fell in a narrow strip of country along the Chowchilla. On the 12th, sufficient rain fell five or six miles, east and northeast, of this point to wet the soil four or five inches, and to stand in puddles for 24 hours. Where it fell heaviest, there was probably more than half an inch. In each instance, these streaks of heavy rain were not more than five or six miles wide.

We are informed that in Stockton quite a good rain fell for several hours on the 30th. So their May rain came the latter part of the month, as has been the case with most of our rains the present season. However much our late grain might have been benefitted by more rain, most of it has been growing, heading, filling remarkably well, when we remember that our last rain fell April 27th. This is the result, no doubt, of heavy dews, cool weather, and some cloudy days. We have had none of the hot, parching days and scorching winds, by which some part of May has been marked for three years past. About the middle of May we had heavy dews, night after night. It has been

A Matter of Some Interest

To observe that these heavy dews accompanied the sudden freshets of the San Joaquin and its tributaries, on account of the rapid melting of the immense masses of snow in the Sierras. There is scarcely room to doubt that the appearance of these dews, after our nights had been comparatively dry, can be correctly accounted for by the increased evaporation of water from the broad surfaces of these swollen streams and sloughs. This evaporation has naturally filled the surrounding air for miles with a large amount of vapor, while our cool nights have condensed this surplus moisture, and deposited it in the form of copious dews.

Some think that the absorption of this increased volume of water into our river banks and adjoining lands, has also improved the crops to some extent. This may be true, in the immediate neighborhood of streams. But to account for this improvement in grain by increased moisture in air, rather than in soil, seems most reasonable. For these good effects are seen at a distance from our rivers to which it appears almost impossible for water to be drawn through the ground, especially in so short a time. Air naturally conducts moisture more rapidly and easily than land.

Whatever the cause, the fact is undisputed, that for the last two weeks in May, without rain, our late grain especially has been greatly refreshed and invigorated, as if by magic, and is still perfectly green and growing well, although we had dreaded that unless more rain came, much of it would fail to mature, and would be worthless, except for hay.

The appearance of heavy dews, the improvement in crops, and the sudden freshets, occurring so exactly together, certainly suggests a close connection between them in some way. Thus, unexpectedly, may the snows from their homes in the mountains, a hundred miles away, have come to the rescue of our thirsting crops.

This welcome improvement in our grain, makes our

Prospects for a Good Yield Better

Than they were a month ago. It may probably justify a rough estimate of 25,000,000 bushels of wheat and barley for our State, instead of 20,000,000. So much to be.

It is rather anticipating our June report, but it may be somewhat cheering for those who are interested in late grain, to know that we had last night and to-day, 0.13 of an inch of rain; the clouds are still heavy, and rain seems to be falling towards the foothills.

Turlock, June 4th, 1872.

J. W. A. W.

Four Years on a Farm.

EDITORS RURAL PRESS:—It occurred to me when I read, "Five Years On a Farm," in the RURAL three or four weeks ago, and then the good effect it seemed to have on one man at least—judging from the answer he put in on the following week—that possibly I may touch upon a string that will, before its vibrations cease, help me to get what I very much need

and have for a long time; and the worst of it is Mr. B.—knows I want it, and he has promised it steadily for the last two years; but the promise is all I get.

We have been on our new farm for four years; we have a nice little door yard in front of our house; we have a good, large barn and stable for our horses and a shed to run the buggy under; and the pigs have a nice pen, but the poor hens—they are my hens—have no good place to roost in, no little private hen-house or room with home comforts and appliances such as hens always delight in having on finding themselves in delicate and interesting circumstances.

So the poor things roost just where they can find a footing; some on the pig-pen, some on the wood-pile—I bring in my own wood—on the beams in the barn over the hay, and there are four or five that persistently retire for the night on the back of the buggy seat under the shed if it gets home in time; but if not, then on the edge of the manger near by. I wouldn't care much if they all roosted on the buggy, for I don't get a ride in it once a fortnight, though some one does, nearly every day, in attending to what he calls "biz"—whilst I must stay at home, do the housework and cooking for him and often for four or five of his workmen, and every one of them want eggs for breakfast.

And then as if to try my patience to the utmost, the stable and half the barn have a floor less than two feet from the ground, and the hens are sure to make their nest under it, for its open all round and I am obliged to assume a most ridiculous posture and movement in order to secure the eggs; when if I could only have a little room partitioned off in one corner of the barn for their use, we would, hens and myself, try our very best to see what we could do; and I wouldn't scatter any more grain on the buggy seat! As Mr. B. likes to have me read the RURAL to him while he lounges, I can skip over that.

Now dear RURAL can you not advise me what to do? I don't think for a moment of leaving my new house or my stronger half; but I do wish he would be a little more thoughtful about home matters, that, while costing but a trifle, would render my share of the work—which I am always willing to perform—a little easier for me to do.

Cache Creek, June 5th, 1872.

We never interfere, nor do we like to give advice in domestic affairs; still as we are quite sure that a few of our farmers are a little at fault, in their neglect of endeavor to render the labors of household affairs as light as they might be, we are willing in this instance to suggest, that perhaps it would be well to sprinkle a little more grain in that buggy; and when eggs are wanted for breakfast, just say that, they are under about the middle of that barn floor, and that they will stay there till they are hatched. We think such a condition of things would be likely to bring about a change of affairs, and result in securing a better place for the hens to lay.

Wool Product of the World.

In the following table will be found a near approximate estimate of the number of pounds of wool annually produced in the different countries of the world, from the most reliable information obtainable:

	POUNDS OF WOOL.
Asia, including Russia in Asia	320,000,000
Great Britain and Ireland	260,000,000
Germany, Netherlands and Belgium	198,000,000
United States	130,000,000
Australia	130,000,000
France	126,000,000
European Russia	125,000,000
South America	110,000,000
Asiatic Turkey	100,000,000
Spain	62,000,000
Persia	50,000,000
North Africa	50,000,000
European Turkey	42,000,000
Italy	40,000,000
Cape of Good Hope	20,000,000
Portugal	17,000,000
Canada	12,000,000
Sweden and Norway	11,000,000
Greece	8,000,000
Denmark	8,000,000
Switzerland	8,000,000
New Mexico	5,000,000
Total	1,818,300,000

There are other countries that produce considerable quantities of wool, but as they export little or none, it is not brought into the account. We present the grand aggregate of the world's annual clip, more for the purpose of showing how entirely insignificant is the quantity produced by any one State of the Union, towards affecting very materially the prices of wool under any circumstances.

The eight to ten million pounds of California wool, the aggregate clip of the present year, though of large importance to our producers, is but a small part of the world's wool that finds its way into the markets of manufacturing countries. Hence we should never put so much stress upon its importance as to believe its presence or not in those markets, will work any material changes in its value.

Wool is an article that keeps, and when prices rule low, producers who are not obliged to realize hold back, and the aggregate of these, when brought out by better prices, has always proved to be very large. Hence the difficulty of maintaining panic prices for any great length of time. Our wool producers and speculators have this year learned the truth of this statement, which will doubtless be heeded in coming years.

MECHANICAL & SCIENTIFIC.

A Waning Star.

In our last issue we made reference to the disappearance of the star, Eta Leonis [the printer made us say Mu Leonis]. Since that paragraph appeared we have seen a note from Geo. Madeira, of Santa Cruz, who, having examined this star with, probably, a more powerful telescope than the San Francisco observer, reports that on the 1st instant it was fast diminishing in brilliancy but had not at that time disappeared entirely. Mr. M. promises to continue his observations for a few weeks and give the public an account of the same.

Such phenomena as the disappearance of a star or any variation in a star which has hitherto maintained a permanent degree of luminosity, are of very rare occurrence and perhaps, a short reference to the more noted phenomena of this kind which have heretofore been noticed may be appropriate in connection with the one which is now attracting the attention of astronomers.

During the last 2,000 years there have been noticed some 20 "temporary stars," which have suddenly made their appearance in the heavens only to blaze out or flicker awhile and finally to disappear entirely.

Of the variable stars, which increase and diminish their light periodically, only about 24 have been thus far recorded.

The first variable star, Mira in the constellation, Cetus, was noticed in 1596. Subsequent observations have shown that this star has a periodicity of about 332 days, during which time it increases from total obscurity to a star of the second magnitude. When decreasing, it changes its color from white to red.

Seventy-three years afterwards, the noted star Argol (the demon star) was observed to be variable. It passes through its variations from the 2d to the 4th magnitude, and vice versa, every sixty-eight hours.

The star Cephas, makes its changes from 3d to 5th magnitude, in about 5½ days.

The most wonderful of the temporary stars, was seen in 1572. It appeared suddenly in the constellation, Cassiopea, and very soon reached the brightness of Sirius, after which it increased in brilliancy until it surpassed even Jupiter or Venus, and could even be seen in the day-time. Its period of increase was about one month; but its period of waning was very gradual—lasting about fifteen months. This star was first white, then red and finally white again.

Some astronomers think that this is a variable star of long period—about 313 years, from the fact that a similar appearance was observed in the same portion of the heavens in 945 and again in 1264. Its authentic appearance having been in 1572, if the surmise of its periodicity is correct its next appearance will be in 1885.

The most remarkable temporary star of recent times was the one which suddenly blazed out with a brilliancy of the 2d magnitude, on the 12th of May, 1866, in the constellation of the Corona Borealis. In its place, previously, had been recorded a telescopic star of the 10th magnitude. The sudden appearance of this star created quite an excitement in the scientific world. It was carefully investigated by Huggins with the spectroscopic, who arrived at the conclusion that the star owed its sudden brilliancy to the evolution of flaming hydrogen. It was naturally supposed that such an active conflagration of that matter could not be of long continuance, and that its excessive brilliancy would soon fade away; a prediction which was fully verified, as the hydrogen lines disappeared in the spectrum in about eight days. It rapidly waned to the 6th magnitude, and more gradually from that to the 10th—its original record. Since 1868 it fluctuates slightly, but singularly, unlike the ordinary variable stars. In 1870 it was of the 7th magnitude, and now it shines with the 8th.

The variations of the periodically variable stars are generally thought to be due to the fact that they are double stars, revolving around a common center—one being brighter than the other. In cases of total temporary disappearance, one star may be totally devoid of light. Again "sun spots" may in some cases account for the phenomena of waxing and waning. In that sense the center of our solar system—the sun—is a periodically variable star of eleven years time—that being the period of its presentation of a greater or less number of "sun-spots."

With the later improvements and better understanding of the spectroscopic, great advance is now being made in astronomical knowledge—particularly in relation to the physical condition of the heavenly bodies. Spectroscopic observations on the star Eta, which just now seems to be gradually flickering itself out of our view, will be looked for with much interest.

MARVELS OF THE MICROSCOPE.—A beautiful and easily produced exhibition of crystal formation may be seen under the microscope as follows: Upon a slip of glass place a drop of liquid chloride of gold or nitrate of silver, with a particle of zinc in the gold and copper in the silver. A growth of exquisite gold or silver ferns will vegetate under the observer's eye.

M. CHAMPOULION avers that putrefaction is much more rapid in the dead bodies of those who have used alcohol to excess than in those of comparatively sober individuals.

Improvement of the Steam Engine.

In a paper read before the Polytechnic Association of the American institute by Professor Thurston, on the above subject, he summed up his conclusions in the following statements:

The direction which improvement seems now to be taking, and the proper direction, as indicated by an examination of the principles of science, as well as by our review of the steps already taken, seem to be:

Steam must enter the machine at the highest possible temperature, must be protected from waste, and must retain, at the moment before exhaust, the least possible amount of heat. He whose inventive genius of mechanical skill contributes to effect either the use of higher steam with safety and without waste, or the reduction of the temperature of discharge, confers a boon upon mankind.

In detail: In the engine, the tendency is, and may probably be expected to continue, in the near future at least, toward higher steam pressure, greater expansion in more than one cylinder, steam jacketing, superheating, a careful use of non-conducting protectors against waste, and the adoption of higher piston speeds.

In the boiler, more complete combustion without success of air passing through the furnace and more thorough absorption of heat from the furnace gases. The latter, I am inclined to suppose, will be ultimately effected by the use of a mechanically produced draught, in place of the far more wasteful method of obtaining it by the expenditure of heat in the chimney.

In construction, we may anticipate the use of better materials and more careful workmanship especially in the boiler, and much improvement in forms and proportions of details.

In management, there is a wide field for improvement, which improvement we may feel assured will rapidly take place, as it has now become well understood that great care, skill and intelligence are important essentials to the economical management of the steam engine and that they repay liberally all of the expense in time and money that are requisite to secure them.

Measuring the Light of Stars.

Zoellner, of Berlin, has recently made an important addition to the means by which the astronomer seeks to measure the degree of light emitted from a star. The small quantity of light which reaches us from these distant bodies, renders the look of measuring the same by the instruments heretofore in use extremely difficult. The invention of Mr. Z., is a polariscope connected with a telescope. By this instrument, a ray of light is made to disappear and reappear alternately, by simply turning an eyepiece of Iceland spar around its axis, through an angle of 90°. This disappearance and reappearance is gradual, and the angle of rotation from 0° to 90°, may therefore be used as a measure of the intensity of the light—the stronger the light, the greater the rotation required to be toned down to a certain standard. Important results have already been obtained by the use of this instrument.

One of the most important results of this instrument, is the power which it gives of more accurately determining the periods of the variable stars. Heretofore it has been so difficult to measure the intensity of the light from a star, it was quite impossible to detect with even much approximate accuracy, the precise time occupied by a star in passing from its period of least light through its gradual increase and subsequent decrease of light, again to its point of least brilliancy.

ARTIFICIAL LEATHER.—Among the different kinds of artificial leather lately introduced, is the following:—J. Charles, in London, and C. Taylor, in Manchester, England, take boiled linseed-oil, and boil it again with quicklime and borax, till they obtain a fluid, which, by cooling, nearly solidifies into a thick dough. To this they add pulverized cork, and some quicklime, and the paste obtained is rolled out into sheets, which, if desired to be very smooth, after being dried, and rubbed down by means of pumice-stone. The process is evidently a partial saponification, and reminds us of the artificial India rubber, which is also made of linseed-oil, without the addition of the powdered cork, which serves only to give the appearance of leather, and is a mere filling or adulteration of the tenacious chief ingredient, in the same way as India rubber is adulterated by similar fillings.

IMITATION LEATHER.—For producing imitation morocco or other leather, a foreign exchange recommends a composition consisting of one pound of glue to five liquid ounces of glycerine, boiled linseed oil being added for flexibility, or India rubber for elasticity, together with the coloring matter. The composition is spread while hot upon the fabric, and impressed with the design. The hardened impressed surface is treated with a solution of alum or chromo or other alum, or with a solution of sulphate of iron, copper or zinc. The alum or sulphates may be mixed with the composition before it is spread. The surface is protected by varnish or waterproof composition, and ornamented by gold, bronze, or other coloring material.

Granite Works of the Ancients.

The following, from an exceedingly interesting account of the colossal granite structures of ancient Egypt, India and South America, appears in the current number of the *People's Magazine* :—

The art of carving in granite has never been carried to higher perfection than on the continent of India. At Chhillambaram, also in the Carnatic, and on the Coromandel coast, is a congeries of temples, representing the sacred Mount of Meru. Here are seven lofty walls, one within the other, round the central quadrangle, and as many pyramidal gateways in the midst of each side, which form the limbs of a vast cross; consisting altogether of twenty-eight pyramids. There are consequently fourteen in a line, which extend more than a mile in one continuous direction! Nor are these the only wonders associated with this metropolis of pyramids. The interior ornaments are in harmony with the whole; from the nave of one of the principal structures there hang, on the tops of four buttresses, festoons of chains, in length about 548 feet. Each garland, consisting of twenty links, is made of one piece of granite, sixty feet long; the links themselves are monstrous rings, thirty-two inches in circumference, and polished as smooth as glass.

Compared with the monolith temples of granite at Mahabalipuram, which is likewise situated on the Coromandel coast, those in Egypt sink into insignificance. The rocks thereabouts are composed of a hard gray granite, containing quartz, mica, and feldspar, with a few crystals of hornblende interspersed. Many have been hollowed out by art, and sculptured into temples with spirited bas-reliefs, representing episodes in Hindu history and mythology, and supported by graceful columns; all carved from the solid rock. Detached masses have been cut into shapes of elephants, tigers, lions, bulls, cats, monkeys, and various nondescript monsters, and colossal statues of gods, one of which; namely, that of Ganesa, being thirty feet high.

"The southernmost of the temples is about 40 ft. in height, 27 ft. in breadth, and nearly the same in length; the exterior being covered with elaborate sculptures. The adjoining edifice is about 49 ft. in length, and in breadth 25 ft.; it is rent by natural causes from summit to base. According to the local Brahminical tradition, these wonderful sculptures were executed by 4,000 workmen, who had come from the north, and returned before their completion. From a careful examination, it is evident that almost all the enormous mass of sculpture and carving that adorns this city of monolith temples and colossi, must have been performed without the aid of fire—with the hammer, chisel, lever, and wedge alone; and this is one of the hardest rocks in the world?"

WEATHER PREDICTIONS.—President Tillman, of the Polytechnic Association of the American Institute, says the weather predictions which are daily published in our newspapers have been verified to about 75 per cent.; that is, three-fourths of all the predictions which they have made have been found to be true.

POULTRY NOTES.

English Advice Concerning Poultry.

Millions of eggs are imported from France and Germany into England; according to statistics, over 20 millions were sent from France in November, 1871. The raising of poultry is said to be neglected by our English cousins to a very great extent, because the business is thought unprofitable. Here is some advice given at a meeting of the Midland Farmers' Club.

To make the poultry business profitable, good stock is necessary. One should procure new fowls or retain a dozen of his best hens and secure fresh blood by means of proper males.

For an entirely new stock, the experience of 20 years or more of a number of poultrymen goes to recommend most highly the dark Brahma. Six hens to one cock. This breed is tough, very productive and gives good mothers. Chickens hatched in April will lay the next winter. With a generous food the young cocks get a firm flesh and are soon ready for the market; they have a very fine flavor. At the Middleton exhibition, four years ago, this breed obtained the first prize.

The second method consists in retaining the best hens of the old stock and purchasing a male of a different breed. For this purpose a Dorking or a dark Brahma rooster is best adapted. Seldom does one find among the poultry offered in the market for the table, birds which surpass in size and weight the common native birds, while much greater advance is shown in this respect by turkeys, geese and ducks. This

is only the result of selecting good stock which cost no more than the inferior birds. Here mention may be made of the superiority of the Rouen ducks, a pair of which at the Birmingham show weighed without feathers, over 19 lbs.; of the Rouen geese, which weighed 58 lbs. apiece; and of the live prize turkey, imported from America, which weighed 36 lbs. All these were obtained by careful selection of birds and individuals.

Hens need new blood every spring, a fact shown by the universal experience of poultrymen here. But there is no breed which can be recommended for all localities and all uses. Often certain races demand special conditions. No fighting cock or Hamburg cock, for instance thrives in a confined space.

It is likewise impossible to raise poultry on a large scale without having two separate yards, one for the old and one for the young birds. This separation is an absolute necessity where there is a large stock of poultry.

In reference to the utility of the breeds, each has some advantage and some disadvantage. Thus, for the small farmer the Dorking is undoubtedly the best in general. But this breed lays far less eggs than the Hamburg or dark Brahma; but the last are far inferior to the first as regards their meat.

Thus Dorkings do not thrive in wet, boggy regions; here they do not pay and are very liable to disease. This is peculiarly the case where they are kept in large numbers in confined quarters, although the Dorkings stand such confinement much better than the fighting cocks of Hamburgers. It is also noticeable that Dorkings thrive on small white peas, when given occasionally, while the foreign breeds do not take to this food.

The silver Hamburgers are constant layers, but bad hatchers. They are unsurpassed for roast chickens. Hatched in April they can be killed in November and December, and surpass all other kinds for this particular purpose. In this time they attain a weight of 5 to 5½ lbs., and a very nice flavor. Some of the most useful kinds for cities and villages are the old fashioned copper-colored moss, month, and red-cap hens of England, excellent layers, but unfortunately dying out.

The Cochin Chinas, if their inclination to hatching could be overcome, would also probably be useful. They require, however, a large amount of food, and give a poor meat. The common Brahmas are also poor table birds. Much better are the Malays in this respect, although held cheap on account of their fondness for fighting. Crosses of Dorkings and Brahmas are not to be recommended; they are inferior in weight to the pure Dorking. Crosses of poultry have as yet been found favorable to other characteristics than for the market.

In regard to the care of poultry, the most important point is to have a well arranged, well ventilated, warm and light hen-house, without draft. The walls should be whitewashed three times a year. For the young, the roosts should be about 3 inches in diameter and only 3 feet above the floor. They should be placed along the walls, but not above one another. High roosts cause stiff-footedness and rheumatism.

Along the walls, at proper intervals, and on the ground, nests formed by laying three bricks as to make a square are the best for laying and hatching hens. They should be provided with hay and with a porcelain egg. This arrangement is preferable to boxes, as it is more easily cleaned, and as the other birds disturb the hens less.

The middle of the hen-house should be a free space, which should be cleaned once or twice each week and strewed with dry earth or fine sand, or with straw during cold weather.

In winter the poultry should be fed at daybreak, before being let out of the house, with rich soft feed, preferable lukewarm, for instance with boiled potatoes mixed with maize or barley meal. At noon and evening grain should be given. During the winter months green feed is good. Fresh water is a daily necessity.

Worms and scraps of meat are in every way good for the small and old birds. But nourishment like worms must be given in moderate amounts; otherwise it causes sickness. It is good when the hens themselves cannot seek for worms, or when these last are unobtainable on account of a dry season.

Birds, after being killed, should be hung up a day in a cool place before being brought into the market. The living poultry should remain a day without being fed just before being killed.

FARMERS IN COUNCIL.

San Joaquin Farmers' Club.

The San Joaquin Farmers' Club convened at 2 P. M., Saturday, June 1st, Dr. Holden, President, in the Chair. The minutes of the previous meeting were read and approved. The President stated he had appointed Messrs. Dudley, Underhill and Ketchum, a sub-committee to assist and advise with the Standing Committee on taxation, who would render all assistance in their power. Mr. Phelps, on the part of the Committee on Labor Exchange, said he had nothing to report. The Committee on Damage to Crops were called upon to report. Fairchild, a member of the committee reported, verbally, that the crops were very promising, with perhaps a little rust in wheat, not sufficient, however, to do any damage. The President called attention to the necessity of growing crops from the danger of fire from locomotives, and stated that a gentleman who was ready and willing to advance money on growing crops, in case the grain was protected by plowing, refused to do so in localities where this precaution was neglected. Mr. Phelps inquired what compensation was to be allowed to the Committee on Equalization of Taxes. The President replied, "Not a dollar." He (the President) would see that the club was put to no expense in that matter. Mr. Taylor suggested that something ought to be done by farmers to have their grain weighed by a city weigher, as considerable dissatisfaction existed among farmers in regard to discrepancies between the buyer and seller. Mr. Wolf stated in reference to harvesting grain that his experience was in favor of stacking his grain before threshing. Taylor concurred in the statement of Wolf. Fairchild said he had threshed in the field and from the stack; every time he got through by either mode, he concluded he would change his mode of doing it—taken altogether with the experience of the past, should this season prefer threshing in the stack. Wright took the same view as the last speaker in nearly all he said; said he thought threshing in the field, if the machinery is in good order, and everything else equal, the cheapest; he desired some information about stacking grain with derrick forks as he proposed to adopt this mode this year. Mr. Wolf said he generally put from 1,500 to 2,000 bushels in a stack of 45x60 feet. In threshing in the field he could not thresh the grain, owing to its extreme dampness; in the after part of the day, the headers could not supply the machine. Fairchild said if he had a gang of men upon which he could rely and his machinery in perfect order he would prefer threshing in the field, but the great drawback was reliable help, and he this year would thresh in the stack, as five men and a boy was all the help necessary to put up the stacks. Taylor wanted to know something about the "Vibrator" thrasher; he had two machines and both wasted grain; he wanted to buy a thrasher, but did not like to invest until he saw the "Vibrator" running. Beecher preferred threshing in the stack, and aimed to make the stacks of such size as to furnish a day's work each for a machine; derrick fork he endorsed as a saving of time and money. Mr. Overhiser favored the use of derrick forks at the stack, and said that if they were properly used, no loose grain would be left in the wagon bed. Mr. Overhiser gave a very particular and interesting account of his experience in working the derrick fork; also, argued in favor of farmers saving their straw. He said he never burned any of his straw stacks. Captain Ketchum said he had adopted a plan in harvesting which did away with the necessity of stacking altogether. He had a machine that did the work all at once—headed, threshed and sacked the grain as it went along. This machine could be run by three men. The cost of harvesting by this method would not exceed one dollar per acre. No grain was lost, and by using fourteen horses, he could cut from fifteen to twenty acres per day. He thought he would use sixteen horses this year. Mr. Smyth considered the process of cutting and threshing together, much the cheapest method of harvesting. He had a machine which he would be willing to put up against any other machine, in point of doing the work well. He believed that by this process, harvesting could be done for half what it would cost by the usual method. He always commenced work in the field late in the morning so as to have the grain free from every vestige of dew damp. The discussion here took a wide range, diverging to effect likely to be produced on future crops by burning straw on the land. This matter was discussed at considerable length by Messrs. Ketchum, Wolf, Wright, Fairchild, and Phelps. The President retiring, Mr. Smyth was called to the chair. The subject of harvesting was further discussed. Mr. Wolf moved that "Fertilization" be selected as the subject for discussion at the next meeting. The motion was carried, and on motion, the Club adjourned.

Meeting of June 8th.

The San Joaquin Farmers' Club met in regular weekly session Saturday afternoon, June 8th, at 2 P. M., Dr. Holden, President, in the Chair. Mr. Phelps, on behalf of the Committee on Labor Exchange, stated that \$12 had been paid and \$4 was yet due on the license. In regard to paying the \$4 Mr. Smyth remarked that if the members who had promised to contribute the amount did not pay the same, he would do so himself. Six men had already

paid \$2 each, and if two more should fail to come forward each with an equal sum, he alone would subscribe the amount. The President, on behalf of the Committee on Threshing Machines, stated that Jones & Hewlett, agents for the Hall & Pitt's machines declined to put in any for the purpose of entering into any contest with other threshers. Captain Ketchum, from the Committee on Taxation, was called upon, and remarked that the Committee was not required to report until such time as an opportunity was afforded of meeting the Board of Equalization in July. The President opened a package of seeds, and likewise laid on the table a number of reports received from Major Beck, Secretary of the State Agricultural Society. He offered the following resolution, which was adopted and ordered on file: "Resolved, That this Farmers' Club tender its sincere thanks to Hon. A. A. Sargent for a valuable lot of seeds; also to Major Beck, Secretary of State Agricultural Society, for agricultural reports from 1859 to 1871; also to Independent for valuable agricultural reports." The President made a statement in relation to the finances of the Club, and urged efforts to increase the membership. Mr. Smyth thought it would be well to tax each member two bits per month. The treasury of the Club ought to be supplied with a fund of five hundred dollars—a reserve fund to employ, if it was found necessary so to do, experts to examine the financial books of counties and State, etc. The time was coming, he thought, when experts would have to be employed to look into the public accounts and to tell the people where the money goes. He made a motion embodying his suggestions, but the motion did not prevail on account of a constitutional provision existing to the effect that a dollar a year is all that each member is required to pay. The matter was postponed until next meeting, with a view of amending the constitution in this particular. Mr. Walthall moved, that, as the attendance was not large, and the subject of "Fertilization" chosen for discussion, was one of universal interest, it be postponed until another meeting, and that the best method of preventing fires in grain fields be taken up in its stead. The motion was carried. Captain Ketchum gave it as his opinion that by far the greatest number of fires which occurred in grain fields originated from matches dropped from the pockets of persons who carried them to light pipes and cigars. He thought it would be well for farmers to prohibit any of the hands employed from carrying matches under any pretext whatever. Mr. Walthall desired some members to explain the best method of arresting fire in a grain field. Capt. Ketchum suggested the use of brush and wet sacks. The President recommended mowing a swath five or six feet wide. Mr. Fairchild thought it would depend altogether on the height of the grain and the strength of the wind at the time of the fire, whether or not a swath cut would be any preventative against fire spreading. Mr. Phelps thought the most efficacious means of stopping fire was to plow a strip around the field. The President suggested the feasibility of plowing six or eight furrows and cutting a swath in addition. Mr. Hitchcock said he had never had any experience. Nobody burned stubble in his locality, and he had no experience in the fire business. He cut out his stack bottoms, cut a strip around every eighty acres, and then through the middle while the crop was green. In this manner he obtained his hay, and at the same time had roads around and through his grain fields. Mr. Benjamin said he plowed close to his fences, sowed heavily near the fences, and then cut a width of twenty feet for hay. He realized a crop from all his land. Mr. Kerrick said he had been up the valley lately and observed that the plowed strips around fields were covered with dog-fennel, and were therefore no protection against fire at all. Mr. Fairchild said he believed fencing could be done in such a manner as to prevent, in some measure, the spread of fire. He fenced on the half-ditch principle—that is, threw up an embankment, upon which the posts were set, and thereon placed three boards. The subject was discussed quite at length, without arriving at any definite conclusion in the matter.

Organization of the Napa County Farmers' Club.

In pursuance of a call published in the Register about twenty farmers of Napa County assembled at the Court House in Napa City on the 8th inst., for the purpose of organizing a Farmers' Club.

The meeting was called to order by W. A. Fisher, Esq. Mr. E. D. Sawyer was chosen temporary Chairman, and G. W. Henning, editor of the Register, Secretary.

Mr. Henning introduced Mr. McCarty, Agent of the Pacific Rural Press, who in answer to an invitation by the chair spoke of the great utility of such clubs, and offered some practical suggestions concerning the organization.

Moved by W. Truebody that a committee of five be appointed on permanent organization. The Chair appointed W. A. Fisher, W. Truebody, P. Van Bever, Dwight Spencer, C. A. Menefee.

On motion, Mr. Henning, Mr. Menefee was elected Assistant Secretary.

Dwight Spencer moved a recess of fifteen minutes that the committee might prepare a report. During the recess quite an interest discussion took place concerning the advantages of shipping grain in bulk, and the great loss resulting to farmers from sack and other monopolies. Messrs. Gridley and Brownlee related

their experiences in shipping their own grain to Liverpool.

The Committee returned and presented the following partial report.

Your Committee on Permanent Organization report as follows:

The name adopted for this organization is "The Napa County Farmers' Club."

We recommend for President, W. A. Fisher, of Napa; for Vice-Presidents, A. Safety, of Calistoga; R. Brownlee, of Suseco; W. K. Salmon, of Carneros; W. H. Nash, of Yountville; Elisha G. Young, of Napa. For Secretaries, G. W. Henning and C. A. Menefee. For Treasurer, P. Van Bever. Also that these officers continue to hold for the term of three months. The report was adopted, and the officers elected as recommended, whereupon the President elect, took the Chair with a modest address.

Moved by Danl. Gridley, that for the present, at least, the club meet weekly.

On motion of Mr. Brownlee, the Secretary was instructed to communicate with other clubs throughout the country, soliciting information as to what was being done to protect farmers against the sack monopolists, and also to obtain information as to the plan and scope of their organization.

On motion of Dwight Spencer, the Secretary was also instructed to correspond with Mr. W. H. Rector of the Oakland Cotton Mills, with reference to the price of sacks.

On motion of Mr. Truebody, the Chair appointed the following Committee to arrange a temporary order of business, and report at the next meeting: W. Truebody, G. W. Henning and P. Van Bever.

At the request of Mr. McCarty, the Secretary was directed to furnish a copy of these proceedings to the RURAL PRESS for publication.

The club adjourned to meet next Saturday, at the Court House, at 2 o'clock, P. M.

W. A. FISHER, President.

GEO. W. HENNING, Sec'y.

Sacramento Farmers' Club.

In the absence of the President, Vice President Manlove assumed the chair. Secretary Hoag being present for the first time in the past four weeks, read the minutes of the last meeting, which were approved.

Rules of Freight.

The subject of rates of freight charged by the express company, on large and small packages or quantities of fruit, long and short distances, coming up, was discussed by Johnston, Greenlaw, Haynie and Murphy. Some of the speakers were very severe on the members of the two last Legislatures, who were pledged to enact laws regulating the freight and passenger charges on the railroads of the State, and, who after election, failed to redeem their pledges.

Haynie asserted that all such betrayers of the trust and confidence of the people deserved to be treated to a little twisted hemp by their constituents upon their return.

Murphy suggested that if they were smart they did not under such circumstances return, but were generally provided with a better thing somewhere else.

Haynie suggested that the farmers of the State had the power and if they would combine, and act in concert through the clubs organizing throughout the State, the evil could and would be remedied at the next session of the Legislature, and he hoped the Farmers' Club of Sacramento would take the initiative and keep up the agitation of the subject until monopolies of all kinds should be made to succumb to the will and interests of the people, as crystallized in laws.

A committee of three, consisting of J. R. Johnston, W. M. Haynie and Robert Williamson was appointed to wait on Wells, Fargo & Co. and the Central Pacific Railroad Company, to obtain a list of prices for freight, from Sacramento to different points on the Central Pacific railroad East, also the rates of passage on the same road in the same direction, and report to the club two weeks from date.

It was stated by members of the club that the express company and railroad company discriminate in their charges against the fruit-growers of Sacramento and vicinity, as compared with the charges on the same articles shipped from San Francisco, San José and other places in that direction, and the object of the committee is to learn the facts in the case.

City Market.

On motion of Johnston, the subject of a general and central city market for the city of Sacramento was adopted for consideration at the next meeting.

Johnston stated that the subject was one of great importance to the producers in the vicinity, to the citizens as individuals, and housekeepers, and to the city itself, and should be ventilated and its importance brought before the public with a view to practical results.

Haynie said he agreed that the subject was one of great importance to all, and especially to the city as a city, to give Sacramento a reputation among the cities of the world. A good market where all the necessities and luxuries can be seen in profusion and obtained at will by any one, gives a name to a city and the surrounding country, and has a tendency to attract strangers to the locality to live. There is no city in the world that can fill a market with better vegetables and fruit, meats and fish and all the proper articles at all seasons of the year, than Sacramento, and yet we have no such market to fill. He believed that the proper place to discuss the subject was before the Trustees, under whose auspices the market

should be established. He therefore moved that the chair appoint a committee to wait on the trustees at their meeting on Monday morning next, and lay the subject before them.

The motion was carried, and Haynie, Robert Williamson, William Kendall and Secretary Hoag were appointed as such committee.

The Stanford Horse.

Charley Lowell, who raised the Stanford horse, being present, gave a very interesting account of his appearance and gait, when a colt. He stated a fact that is not very generally known; that he was not sired by the old horse St. Clair, but by one of his colts; that he (Lowell) raised his sire and sold him for \$1,000, when three years old; that he died on his way to Oregon; that the dam of the Stanford horse is at least half Spanish.

Grain Sacks.

The Secretary read a communication from Mr. Lind, Secretary of the Contra Costa Farmers' Club, asking the cooperation of the club in some place for a concert of action in obtaining grain sacks at a reasonable price. The Secretary stated that he had answered the letter, and he understood the action of the Farmers' Clubs throughout the State was likely to bring about practical and beneficial results in the premises; that he had also, through the RURAL PRESS, suggested to the farmers throughout the State the propriety of building bins in their fields, for the temporary storing of their grain until the attempted corner on grain sacks should be broken up.

The action of the Secretary was approved, and he was requested to keep up the correspondence on the subject as long as any good was promised.

The Club adjourned one week.

Lecture Before the Oakland Farming, H. and I. Club.

At the meeting of the Oakland Farming Club held May 31st, Prof. Carr was in the chair. Mr. T. Hart Hyatt presented for examination a yellow substance resembling ochre, which he collected in a spring on land of his in Napa county.

The subject for discussion was "Irrigation of Trees," a report of which was given last week. Prof. Carr having been invited at the previous meeting to give a lecture on such subject as he might choose, was now called upon.

Lecture on Water.

He said that a consideration of the general properties of water might be a good preparation for the discussion of the evening. Water as generally met with is never pure. It contains many substances taken from the air and soil. Pure water is very insipid; being tasteless and odorless. It dissolves many mineral substances, and is the nearest thing to a universal solvent which we have. Even glass may be dissolved to some extent by heated water. California abounds in mineral springs which are remarkable for the variety of substances which they contain in solution.

What Makes Water Hard?

Water is made hard by lime in the common form of limestone. Plants get their mineral constituents from the water they imbibe. An experiment was made by the professor showing how water charged with carbonic acid will dissolve limestone.

The air contains carbonic acid gas. Water falling in the form of rain or dew absorbs this gas, and thus acquires the property of dissolving the limestone contained in the soil. After soaking through the soil water becomes hard, particularly if the soil is chalky.

An experiment was here made showing why hard water is not good for washing. A compound of lime and soap is formed which interferes with the cleansing qualities of the soap.

Hard Water can be made Soft

By separating the limestone from the water by using potash, borax, soda, or even burnt and slacked lime.

In England water is softened in reservoirs in this way on a large scale. By this method the lime stone is precipitated in a state of fine mechanical division, and does not then interfere with the use of soap. Boiling water softens it by driving off the carbonic acid and throwing down the lime. Crusts in boilers and kettles are formed in this way.

The value of washing powders depends upon the amount of soda or borax which they contain. These substances can usually be bought cheaper at the druggists than in the washing powders.

Hard Water the Best for Drinking.

It has been found that water which is more or less hard, when used for drinking, makes people more vigorous than that which is soft. The soldiers in the French army during the late war who were most vigorous came from the lime-stone districts. The reason for this is that the mineral constituents necessary for the healthy growth of the body are furnished in abundance.

The capacity of air for the vapor of water varies with the temperature, as shown by the following table:

Temperature.	Grains of Water in Cubic ft. of Air.
0 Degrees.....	1.8
32 ".....	2.35
40 ".....	3.06
50 ".....	5.82
60 ".....	7.94
70 ".....	10.75
80 ".....	14.38
100 ".....	19.12

There is always some vapor in the air, though

little, if the temperature is low. The air may not contain all that is shown in the tables, but it is capable of it.

If air at a given temperature is saturated with moisture it loses some of it in the shape of dew or rain, when the temperature is lowered. Pulverized soil cools the air which circulates through it, and takes up the moisture which it contains. This is one reason why ground that is under drained, and well cultivated, stands a drought better than that which is not.

Composition of Water.

Water is composed of two gases, hydrogen and oxygen, in the proportion of two parts of the former to one of the latter. An apparatus for generating hydrogen was shown and explained by the Professor. Hydrogen was shown to be lighter than air by blowing bubbles with it and letting them rise to the ceiling. Some bubbles were burned, giving a yellow flame on account of the soda in the soap used. A pure hydrogen flame is nearly colorless, but very hot. When burned, hydrogen unites with the oxygen of the air and water is formed, which may be condensed in a cold bell-glass held over the flame, as shown by the lecturer.

Oxygen and hydrogen burned together in the proportions contained in water give an intensely hot though not brilliant flame. It may be used for illumination by heating a piece of lime by means of it. The club were shown by experiment that an exceedingly brilliant light could thus be produced. Water contains great latent energy in its elements. A dish full of oxygen-hydrogen bubbles touched off by the lecturer produced a startling report.

The following substances when burned give the degree of heat indicated by the figures set opposite them.

Sulphur.....	3308 F.
Coal gas.....	4262 F.
Hydrogen.....	5898 F.
Oxyhydrogen.....	14542 F.

It will be seen that the last is much the greatest. In our last issue we reported Mr. Bagge as saying that trees set out by him on dry soil died. We should have said that they did well, while those in a wet soil perished.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Oakland News, May 27: GRAIN SACKS. The Oakland Jute Factory, with its seventy looms, is now turning out grain sacks at the rate of three millions per annum. The demand this summer will be enormous, amounting to upwards of ten millions according to the latest estimates.

Gazette, June 6: THE WEATHER.—Last Friday evening a fine shower gladdened the hearts of everybody in this section who had no hay or grain cut and exposed. Since then we have had several slight sprinklings, and Tuesday morning had a genuine thunder storm which is something remarkable for this country at this season of the year. Thus far we have had less than our usual share of hot or warm weather. Most of the time during the past month the temperature has been just comfortable. Nearly all kinds of crops are doing well; especially those which were put in early. Farmers are now engaged in their haying operations.

AMADOR.

Dispatch, June 1: HAY.—While some of our valley cotemporaries are complaining of the shortness of the hay crop this season, we are informed by Mr. Milo H. Turner that he has just finished mowing a small ranch of five acres, near town, and that it has yielded fifteen tons of hay, or an average of three tons to the acre, and there are probably other ranches in the vicinity that will yield equally as well. How is this for high?

BUTTE.

DRY CREEK.—We learn from a farmer on Dry Creek, that the crops in that section do not average well. Some few have good crops, but the average of the yield will be no better, and probably less than it was last season. The reason given is that the winter was altogether too wet for that locality, and when the spring opened, the north wind played sad havoc with the young grain, checking its growth materially, and in some instances destroying it entirely.

NEW HAY.—The new crop is coming in freely, and is of excellent quality. A large crop will be gathered in this section, far larger than the usual yield. This is owing to various causes, chief of which may be reckoned the extreme wetness of the season. Hundreds of acres of grain on which the water stood too long have been cut for hay, which, in ordinary seasons, would have made excellent grain. And much of the low land which was too wet for early planting was planted late, and the north winds proving injurious it was cut as hay crop, the profits on that being sure, while the chances of its making a crop of grain were very problematical. There will be no scarcity of hay in this part of the valley

this season, and it will sell at remunerative prices.

Record: FINE WHEAT FIELD.—Those who have seen the wheat field of Mr. Max Brooks, in Hamilton township, pronounce it the finest in this section of the State. It is a field of 600 acres, stands higher than the fence and, it is confidently asserted, will average fifty bushels to the acre. It will be ready for harvest the latter part of next week. It is on the Henshaw tract, is Feather river land, and was what is termed summer fallow. Mr. Brooks also has 400 acres of barley, which promises forty bushels to the acre. Hamilton township is a good agricultural section, and is rapidly filling up with thrifty, enterprising, go-ahead farmers.

Appeal, June 6: MOUNTAIN FRUIT.—We learn from Captain Pickens, who has the fruit ranch two and a half miles this side of Timbuctoo, that his grape crop will be larger this season than ever before. The blackberry crop is also good, but his strawberries were a failure. Throughout the mountains the grape crop promises excellent, and the vintage of this season will be larger and of a superior quality. The Captain will add largely to his stock of fine old wines this season, as will several others of the mountain grape-growers.

SHEEP.—Charley Kent of Nevada, brought to town 800 sheep yesterday, from Colusa. They will be shipped to Yuba Station to-day, from whence they go to Nevada.

Standard, June 1: APRICOTS.—We understand that our orchardists, who will have but a few hundred boxes of the large variety of apricots this season, will probably get the earliest of them to market in about ten days.

OUR Wheatland correspondent sent us yesterday the following items: "Our streets present a lively appearance—teams loading freight for the mountains, and farmers coming to town getting ready for harvest, which will begin soon if the weather keeps warm. The blacksmith shops are crowded with work on machinery for the harvest fields. The hay is nearly all cut, with the exception of some large crops, and new hay baled is already making quite a show in the place. Some hay presses are hard at work, and others just starting in. The hay crop will be good, and more than an average. Grain looks well, and in the vicinity of Wheatland the yield will be large, and on the plains, a few miles from here, about medium. It will be short and thin, but the heads are all well filled, excepting low places, where there is considerable cheat.

CALAVERAS.

FAVORABLE HARVEST.—Mr. Henry Reinking, whose farm is located in the Spring Valley bottom land, informs us that he has harvested a fair crop the present season. Mr. Reinking is a thorough practical farmer who by close attention to his business and careful husbandry grows good crops in spite of flood, drouth and north winds.

BIG TREES.—Judging from the brisk manner in which travel to the Big Trees opens this Spring, that famous resort will be the centre of attraction for pleasure seekers during the season. The number who have already booked their names at the Mammoth Grove Hotel is large comparatively speaking, and we learn from Eastern papers that more people will visit this coast this year than ever before. No one would think of crossing the continent and returning without seeing the Big Trees. They are among the greatest natural wonders in the world, and certainly form the principle point of attraction to tourists visiting this coast. Their fame is as wide-spread as the diffusion of civilization, and the representatives of almost every nation on the globe pay homage at the court of the Monarchs of the Forest.—*Ec.*

CONTRA COSTA.

Gazette, June 1: GOOD GRAIN WEATHER. The cool and partially cloudy weather with the westerly winds of the past two or three weeks have greatly improved the grain crop prospects here, as well as elsewhere in the State. The grain in our vicinity will certainly be twenty-five per cent. better than there was any reason to hope two weeks ago, and if the favorable weather should continue two weeks longer the district will turn off some big yields, but it is not reasonable with the most favorable chances to expect much of the latter sowings of the season.

Gazette, June 8: THE LAST RAIN.—The cloudy weather of last week culminated in a smart rain which commenced about nine o'clock on Friday evening, May 31st, and continued until three or four o'clock on Saturday morning, making a full half inch measure in the gauge, and bringing the total for the season to 28.97. It sprinkled slightly again Saturday evening, and on

Monday afternoon we had a lively crashing of thunder and lightning with only a very light sprinkle of rain. On Wednesday the sky cleared off and the weather has since been bright and pleasant. The rain undoubtedly damaged some hay but has been of great benefit to the late wheat, and as the weather continued cool and breezy until it fairly cleared up, no rust is likely to have resulted from the moisture.

THE HARVEST.—The headers, reapers and threshers are now being put in working trim preparatory to the coming harvest, which, unless hurried up by hot weather and northerly winds is yet two or three weeks off in this section, but is already begun upon the San Joaquin and in other portions of the interior. We are now probably entering upon a term of hot weather experience, succeeding the cool spell of the past three weeks, and on Thursday evening the wind got into the northerly quarter, where it remains, veering easterly, with a rising temperature, as we go to press Friday afternoon, and we are a little apprehensive of the effects.

EL DORADO.

Republican, June 6: PEACHES.—It has been the prevailing belief that nearly all the peach crop of this part of the county had been cut off by the frost. We are glad to be able to assure our readers that the crop will be much larger than the requirements of the people of this section. We hear ranchers say frequently that their trees are fairly breaking down with them.

FARMERS in this locality are now engaged in securing their hay crop, which is lighter than usual, as a general thing.

KERN.

Havilah Miner, June 1: THE CROPS.—The condition of growing crops at present in this county, very forcibly illustrates the great advantage gained by early planting. From a gentleman who has recently taken a tour through Linn's Valley, South Fork, Tohatchapee and other fertile agricultural portions of the county, we are informed that the barley and wheat, sown before the fall of early rains, appears unusually well, and gives promise of a very large yield.

Barley that will average from two and a half to three and a half tons to the acre, is about to be cut on Mr. Chandler's ranch. This extraordinary luxuriant crop, has been sold as it stands for \$25 per ton.

Laborers and miners are in great demand in this county. The large quartz mills here and at Kernville, have been compelled to partly suspend business in consequence of the scarcity of operatives to work them. Ready employment and fair salaries can be obtained here by any of the above class of workmen.

LOS ANGELES.

News, June 1: THE CORN MARKET.—There has been a decided change for the better in the corn market. That grain is now commanding a ready sale in the local market at from \$1.20 to \$1.30 per sack of 100 pounds, an advance of from 7½ to 17½ cents per sack.

Californian: New hay, loose, is sold from \$5 to \$6 per ton, baled, \$8.

Crops on the Upper Santa Ana are excellent.

Present appearances indicate that the bunches of grapes will this year be much larger than usual.

Mr. W. R. Olden is planting 100 acres of cotton, a portion of which is already up and looking well.

Artesian water has been struck at a depth of only 60 ft. on the farm of Mr. Jesse Davis, in Westminster Colony.

MERCED.

People, June 2: KING COTTON.—T. J. E. Wilcox, who with others, has about one hundred acres planted in cotton, on Mariposa Creek, has sent us a plant measuring some twelve or fourteen inches in length. This sample was taken from a field planted the 5th of last April, and is the average height of the entire field embracing the number of acres mentioned above. From the looks of the plant before us, we feel confident that cotton culture can be successfully carried on in our county, and we are certain the fact will be demonstrated this season by those who are interested in the matter.

NEVADA.

Union, June 4: CROPS.—While the crops of hay below this place are not as good as farmers wish, the higher mountain crops are very fine. Between this place and Nevada City we observe several splendid fields of grain, now ready for the reapers.

SANTA BARBARA.

Signal, June 1: CASHMERE WOOL.—Hon. A. G. Escandon, of this place, is the owner of a fine flock of graded Cashmere goats.

The patriarch of the tribe is a large, full-blooded fellow, with a fleece like a summer cloud. A specimen of it measures nearly eight inches in length, and in fineness of texture makes the work of the silkworm appear decidedly coarse. Mr. E. says his flock is rapidly increasing, and thinks the hills of Southern California and its climate perfectly adapted to the nature of the animal. Besides the profit of their fine fleeces, the mutton as much exceeds that of the sheep in juicy flavor as does its wool in fineness of staple. This stock requires much less care than sheep, and will live and thrive where the latter would starve. The expense and trouble of obtaining good bloods of this valuable animal is the only bar to its general introduction.

The orange crop of Los Angeles is now all in the market. Five millions of oranges, at an average price of \$20 a thousand, is something to brag on.

The Suey Rancho, San Luis Obispo county, has been sold, together with 12,000 head of sheep, to H. M. Newhall for \$126,000.

SANTA CLARA.

A FLORAL CURIOSITY.—J. B. Rinehart of this city, has growing in his beautiful garden on Church street, a black lily bearing three large blossoms, each 9 inches long and perfectly black. The outside of the leaves are green while the inside and edges are black. We were told by a florist that it is a floral phenomenon. One of the blossoms can be seen at the Drug Store of Briggs & Clifton on Monterey street.

SANTA CRUZ.

Pajaronian, June 6: A CURIOSITY.—Mr. Stoesser of this place, showed us a few days since, a plum or prune tree in his yard, which has on its branches a fine crop of fruit, the plums being as large as pigeons' eggs. At the same time the trees are blooming beautifully, some of the branches being almost covered with blossoms! Buds are also forming, and it is a very curious and interesting freaks of nature, the first of the kind we ever saw.

WEATHER.—The weather during the past few weeks in this section has been very pleasant, for the most part, and grain and grass is doing splendidly. Many of the nights have been foggy, but the mornings and days warm and sunny.

WE WERE conversing with a farmer who resides a few miles from Watsonville, a few days since, and he said: "Crops throughout this section promise to be splendid. On my ranch I have never known so good a showing at this time of year." Not only does wheat and barley look well, but flax, corn, rye, fruit trees, vines, vegetables, and in fact all crops, present a most encouraging appearance.

TULARE.

Times, June 1: THE CROPS.—There has been some little complaint, in this valley, of grain having been pinched by the drouth. Some fields of late sowing have presented quite a shriveled appearance. The little valleys among the foothills have not suffered to the same extent, however.

NEVADA.

THE THREE GREAT PRODUCTS OF TRUCKEE.—The three great products of Truckee are lumber, shingles, and coal. Of each of these three items it produces more than any other town in California. It supplies a population of over 100,000 people with these products, and is the most available point from whence they can be obtained. Salt Lake is building up with Truckee lumber, and the mines of Nevada and Utah are supplied with Truckee timber, and Truckee coal is used to smelt their ores into base bullion.

MORE FISHERIES.—Several parties are now examining points along the river above Truckee and around Lake Tahoe with the view of establishing artificial fish ponds, and raising fish for market on a large scale. These parties, beside raising trout, intend experimenting with several other kinds of fish common to the Eastern and Northern States, such as the pickerel, the bass, and the white fish of the Great Lakes. The pickerel is a voracious fish, and will be kept in separate ponds.

OREGON.

Oregonian: The Oregon State Agricultural Society offers premiums ranging from \$1 to \$50 for the scalps of animals killed between January 15, and October 1, 1872. In the award of premiums squirrel scalps will be made the standard, one jay-bird being equal to 1, one panther to 50, one wolf to 50, one gopher to 18 and one wildcat to 20.

THE Oregon State Horticultural Fair will be held in the City of Portland next week. A shower of rain fell there on the night of the 11th.

THE FARM.

Impoverishment of the Soil.

In the science of agriculture the theory of compensation has been very widely accepted as a fundamental principle of farming. It is derived from Liebig's teaching—that the productiveness of the soil can be maintained lastingly only by giving back to the ground just as much mineral matter as is taken from it by the crops.

This theory appears almost axiomatic yet it cannot be denied that experience does not always seem to agree with it; indeed, one could say, generally disagrees with it. There are regions where for hundreds of years crops have been taken from the soil and no material added to the ground in return, without any diminution in production; in fact in some cases in consequence of higher cultivation, the production has been increased. One would search in vain for a worn-out soil on the Rhine, as around Cologne, Bonn, etc., where agriculture has been carried on since the time of the Romans without compensation; on the contrary, he would find here that the fruitfulness of the soil has been increased during the last centuries. The number of such instances forces one to ask whether this theory is correct. Let us try to answer this question.

In order to be fruitful, the soil needs actually only a proportionally very small amount of plant-nourishing material, provided this is in a form to be easily taken up by the plants. The sand cultivation of Hellriegel shows this conclusively. A quartz sand, treated with boiling sulphuric acid and washed clean, holds in one million parts, besides the other nourishing substances, 71 parts of phosphoric acid and 94 parts of potash, and yet gives very rich barley crops, under careful regulation, to be sure, of all other needs of vegetation, as, for instance the proper amount of moisture. But even these proportions are not the smallest compatible with rich harvests. The minimum amount of potash with the maximum yield of barley Hellriegel found to be between 47 and 71 parts in one million parts of sand. The minimum of phosphoric acid is not known. The minimum of both we may take without fear of getting too far from the truth, as 50 parts. If we take the litre of sand as weighing 2 kilogrammes, there will thus come to the acre, with a depth of 31.39 centimeter (about one foot), 240,000 kilogrammes (264 tons) of sand and 15 kilogrammes (33 pounds) of potash and phosphoric acid. This small amount, if in proper form for easy absorption by the plants, can make the sand fruitful, other necessities for vegetation being cared for.

If we compare a number of fruitful soils we shall get some remarkable results. One hectare (2½ acres) with 31.32 c. m. depth contains at the following places the following amounts in kilogrammes (22 pounds).

	Potash	Phosphoric Acid.
1. Wegeleben	93,000	25,000
2. Dahlheim	120,000	26,000
3. Kerstenbruch	60,000	8,200
4. St. Nicolas	9,400	2,384
5. Belgian Campaign	22,000	1,100

Soils 1 to 3 are famed for their productiveness; soil 4 is one of the best in the Rhine provinces; soil 5, a sandy soil, with 94 per cent. sand and 6 per cent. loam, can produce 30 bushels of wheat and 34 bushels of rape to the acre.

What a difference between Dahlheim and St. Nicolas with respect to the most important plant-nourishers! Yet the last yields no inferior crops in comparison with the other.

The amount of the nourishing materials has no influence on the productiveness; this is dependent on the form, the solubility of the material.

Let us assume that these soils are used alternately for grain and for pasture, and that an average yearly amount of 14 kilogr. of potash and 16 kilogr. of phosphoric acid is taken from them. Then it would take 8,000 years before Dahlheim, 6,000 years before Wegeleben, and 3,500 years before Kerstenbruch would be reduced to potash quantum of St. Nicolas; and 1,500 years before Dahlheim, 1,400 years before Wegeleben, and 360 years before Kerstenbruch would have as little phosphoric acid as St. Nicolas. Now St. Nicolas is far from being a barren soil, and would demand 80 years to sink to the phosphoric acid condition of the Campaign. Many thoroughly fruitful soils, moreover, contain considerable less phosphoric acid than St. Nicolas; the majority, however, contain very much more of both ingredients.

Considering the fact that the soil can yield rich crops even when containing very

small amounts of the plant-nourishing materials, the theory of compensation—that it is unconditionally necessary to return to the soil what has been taken from it—becomes questionable; and one must consider it wasteful to treat, according to this theory, soils rich in plant-nourishers which retain their fruitfulness without such return being made.

The point lies not in the necessary return of that which is taken from the soil by the harvest, but in the full return of those substances to which is due the fruitfulness in the highest grade.

An impoverishment of the soil to such an extent as to totally destroy its ability to produce any yield, is not supposable; partly because cultivation must cease, from economical reasons, before such a point is reached; partly because the ability to yield depends on amounts of nourishing material, the obtaining of which is, economically, not impossible. The yield and the fruitfulness, or the ability of the soil to produce good paying crops, can indeed be lessened through insufficient compensation; only here the reason lies in the impoverishment of the material which easily passes into plant-nourishment, and that can easily be compensated for by proper management. Much more difficult is it, as a rule, to again put in good condition soil which has been impoverished through neglect and diminution of the other factors of fruitfulness; for instance, by disappearance of the loam from light soils of dry regions; by loss of the lime in naturally tough clay soils. And where we find impoverished soils, generally conditions of this last kind are the causes; much less seldom does the reason consist of an impoverishment of the plant-nourishing material, never of an absolute destitution of the plant-nourishing substances.

The fruitfulness and productive ability of the soil are, therefore, not dependent upon the absolute amount of the plant-nourishing substances. Should we, however, cultivate a fruitful soil (which had, however, but little loam) with grain for six or eight or more years without manuring, the crops would diminish in most cases, although the total amount of plant nourishment would be lessened only to a very small extent. The effect of the manure depends on the addition of small amounts of plant-nourishing substances to the considerable total amount of the same. With 40 kilogr. of phosphoric acid to the hectare, very considerable increase of yield is often obtained, and what are these 40 kilogr. in comparison with the many thousands in the soil! It follows from this, that the amount of those constituents of the soil which are particularly adapted to nourishing plants, is small, and altogether the largest part of the nourishing substance in the soil is not in a condition to be easily taken up by the plants. In general, the substances are easily appropriated by the plants when they are dissolved or easily soluble in water, or can be absorbed by the roots without need of chemical force. These chemically, easily movable substances, we will call simply plant-nourishing material; the difficultly soluble and undecomposed nourishing constituents of the soil we will call raw nourishing material.

The plant-nourishing material need not always be dissolved in the water of the ground; much of that contained in manure is, indeed, insoluble in water, as acid phosphate of lime; it remains, however, under nominal conditions easily soluble in waters holding carbonic acid and in other solvents of the soil. It should be said, perhaps, that parts of the soluble constituents of manure may be caused in the soil to form chemical compounds which are insoluble, as, perhaps, phosphoric acid meeting iron oxide. The varieties of soil in this respect will act very differently, some making difficultly soluble large amounts, and some small amounts. It is not improbable that the large absorption of manure by many raw soils is due to such action.

The amount of plant-nourishing material can not be large even in fruitful soil. A noticeable influence on the yield through manuring is explainable only when the addition of nourishment and the total amount thereof are in a near proportion to one another. An addition of 1-50 can have no noticeable effect on the yield, but an addition of 1-5 or 1-10 gives proportions which afford a conceivable action. From the preceding considerations it follows that, in regard to plant-nourishing material, we have not to deal with large amounts.

While the plant-nourishing material affords the principal part of the nourishment of plants, the raw material can also help more or less, since continually, through the action of oxygen, of the constituents of loam and other reagents,

greater or smaller amounts are being brought into solution continually, and since many plants have the root-power of directly absorbing large amounts—such plants (as lucerne, the varieties of clover, meadow grasses, etc.) enrich the soil.

The foundation of agriculture consists in the maintenance of the chemically easily movable nourishing materials and in the enrichment which it receives from the raw material.

On the amount of nourishing matter depends the ability to yield and the fruitfulness of the soil. With its increase, can these increase to a certain limit; if it falls below a certain limit, these decrease. Over this limit, certain variations are possible, if the plants are cultivated in rotation so that their capability of nourishment correspond to the condition of the nourishing material. In order not to have the amount of nonriching material fall below this limit, as much easily soluble nourishing substance must be added to the soil as is removed by the plants. In other words: the plant-nourishing material must be kept in equilibrium if the productiveness and fruitfulness are not to decrease.

The compensation for the substances taken from the plant-nourishing material comes therefore from two sources;—the manure and the raw nourishing material. The greater it is from the last source, the less manure is needed.

The amount of enrichment from the raw material is of course variable, according to the soil and the conditions of cultivation; for individual cases it has not yet been ascertained. The same may be said in regard to the substances dissolved by the root-action of the plants. Experience has shown that lucerne and some similar crops, cultivated in a field for 5 to 6 and 3 to 5 years respectively, leave the field as rich as or richer than before. The other plants mentioned above also enrich the soil.

In order then to maintain the productiveness of the soil, we need not to give back to it an amount of nourishment equivalent to the enrichment; how far the diminution in the compensation can go, however, we cannot state in figures. The amount of nourishment which is taken up by lucerne, perennial clovers and lupines, is not generally returned to the soil without injury to the productiveness but as a part thereof is returned, the productiveness is increased. In many systems of cultivation the amount taken up by red clover and grass is not returned and yet the systems work admirably; in other cases this does not answer. We must limit ourselves now to indicating these few cases; waiting for more extensive research to give us reliable rules of practice.

We think it also necessary to remark that compensation can retain only the productiveness in its height. But the majority of soils may be far from having reached their highest productiveness, and most farmers may still have the task of increasing the nourishing material by giving back wholly or partly the substances obtained through enrichment or by manuring with substances which are easily soluble and can directly increase the amount of nourishment, as guano, bone meal, superphosphates, potash salts, etc. For soils poor in lime, manuring with lime will also be proper, this material being necessary in large quantity and being removed in considerable amounts by the harvests and also by the rain. A want of sulphuric acid is often the cause of a poor crop. Potash on the other hand, appears unnecessary in many soils, as it occurs in large amounts and is easily soluble; which circumstance may perhaps account for the frequent cases where potash manures have been found useless.

To conclude, the fundamental principle of agricultural system will not read—in order to retain productiveness, all mineral plant-nourishing substances removed by the crops must be returned to the soil; but it will be rather—as much plant-nourishing substances must be returned to the plant-nourishing material by means of manure and self-enrichment, as is lost through cultivation of the plants.—Dr. W. Schumacher.

SHEEP FARMING IN SCOTLAND.—Sheep farming is an extensive business in Scotland. In June last there were 6,700,000 sheep in that country, and of these 4,500,000 were on regular mountain sheep farms; the remainder were on arable lands. In the lowland hills about two acres are required on an average for each sheep, and each farm grazes from 500 to 2,500 animals. The Highland sheep farms comprise from 1,000 to 25,000 sheep; the common size, however, runs from 4,000 to 6,000.

Alkaline Soil.

EDITORS PRESS:—Is there any known chemical agent that will neutralize what is commonly known as alkali (a peculiar substance contained in the soil in some parts of the State) when properly applied, without deteriorating the productive qualities of the soil?

Alkali is destructive to vegetable life, and thousands of acres of level land—land easily irrigated and cultivated on this coast, is lying idle and neglected in consequence of the presence of a superabundance of this mineral salts.

Therefore, he who can—aside from drainage and manure,—suggest a cheap plan for the rendering inert of alkalis in the soil, will merit a monument of fame from the farmers of California. A. KAMP.

San José, May 2, 1872.

We know of no method aside from irrigation and the application of coarse manures, that will remedy the excess of alkali in our soils, except the culture of such crops as draw largely upon it; as potatoes and beets. Beets can be grown upon soils that will produce no other of the ordinary farm crops, and these take up largely of the alkali, and but two or three croppings are required to render almost any of such lands, productive of grain and other crops thereafter.

A writer in the *Chicago Journal*, takes the following view of the perpetual fertility of these lands after their first successful cropping.

Salts in the Soil.

All have heard or read of the alkali plains. There are more places where alkali effervesces than is commonly supposed, in fact there is scarcely a place in which these salts are not found. Analysis shows that these salts are compounds of soda, potash, lime and magnesia, with sulphuric, nitric, hydrochloric and carbonic acids. It is well known that, in some of these forms, these salts enter largely into the production of plants and trees, and it is manifest that these lands must produce large crops and thrifty trees. The valleys through which the surface waters are drained, or in which they may be preserved in pools, are naturally charged with these salts, and thus the waters become rich in all plant food; and for this cause we may rest assured that all irrigated lands on these plains must remain rich in these salts, and must for a long period of time, be as productive as in their virgin state. It is not more than two hundred years since the Mexicans planted themselves on the Rio Grande, and those lands which they have cultivated in wheat and corn during that time are yet as rich, and the yields now produced as great as at the beginning. The Pueblo Indians of the same Territory, have cultivated their lands for a much larger period, and yet they show no sign of diminished productiveness. There can be no reason given why every portion of the plains, which can be irrigated, will not be equally productive and durable.

The Future of the Plains.

Room only remains to say that the outlook in the future is, that these plains will, in that future, become the land that shall flow with milk and honey, and become like the garden of the Lord. With irrigation, the land will swarm with people; without it, this region will pass into the hands and control of wandering herdsmen, with their herds of cattle and sheep. Railroads have already penetrated these plains, and others are looking in that direction. These call for settlers, and no time should be lost in acquiring knowledge of the art of irrigation. To do a little in that line, has induced the writing of this and a former paper. The knowledge and practice must make all the plains yield their increase, and wave their ripening crops, and give homesteads where once was the "American Desert."

ONE of the lessons many times learned and which the last season has forcibly confirmed, is that high cultivation is sure to reward the farmer for the labor expended in any season whether wet or dry. High cultivation means deep and thorough working of the soil, thorough pulverization, liberal manuring, clean culture and bountiful crops of all kinds. High cultivation, coupled with good judgment, seldom disappoints the expectations of the farmer.—*New England Farmer*.

USEFUL INFORMATION.

To Shave Scientifically.

Never fail to wash your beard with soap and water and to rub it dry, immediately before you apply the lather, of which the more you use, and the thicker it is, the easier you will shave.

Never use warm water, which makes a tender face. In cold weather, when it is inconvenient to warm your razor otherwise, place it, closed, in your pocket or under your arm to warm it. The moment you leave your bed (or bath) is the best time to shave.

Always wipe your razor clean, and strap it before putting it away; and always put your shaving brush away with the lather on it.

The razor (being only a very fine saw) should be moved in a sloping or sawing direction, and held nearly flat to your face, care being taken to draw the skin as tight as possible with the left hand, so as to present an even surface, and to throw out the beard.

The practice of pressing on the edge of a razor in stropping it soon rounds it; the pressure should be directed to the back, which should never be raised from the strop. If you shave from heel to point of the razor, strop it from point to heel; but if you begin with the point in shaving, then strop it from heel to point.

If you only once put away your razor without stropping it, or otherwise perfectly cleaning the edge, you must no longer expect to shave well and easy, the soap and damp so soon rust the fine teeth and edge.

A piece of soft plate leather should always be kept with razors, to wipe them with.

A SUPPOSED FREAK OF NATURE.—A Vicksburg paper furnishes the following as a freak of nature. The item is having a very general circulation through the newspapers:—Upon a spot where had been buried a soldier who fell at Champion Hill, who was buried in his blood, grew a peach tree that had reached maturity, while its roots steeped themselves in the martyr's blood. Singular to relate, the leaves and fruit of this tree are a blood-red color. The tree was transplanted, and is now in an orchard in this country. The propagations from the tree are of the same peculiar color. There is something very peculiar about this. We have seen the leaves, and must confess that they do look and even (to us) smell like blood. The fact can be witnessed by those taking the trouble."

There is a variety of the peach which very fully answers the above description, and it don't always grow on a soldier's or any other grave; although such a locality, especially if it was a mellow one, would most probably greatly improve the appearance of both tree and fruit, and especially its peculiarly distinctive character of redness.

WHAT A PIANO IS MADE OF.—A writer has taken the trouble to give the actual material used in constructing a piano-forte. In every instrument there are fifteen kinds of wood, namely, pine, maple, spruce, cherry, walnut, white-wood, apple, basswood, and birch, all of which are indigenous. And mahogany, ebony, holly, cedar, beech, and rosewood, from Honduras, Ceylon, England, South-America, and Germany. In this combination elasticity, strength, pliability, toughness, resonance, lightness, durability, and beauty are individual qualities, and the general result is voice.

There are also used of the metals, iron, steel, brass, white-metal, gun-metal, and lead. There are in the same instrument of seven and a half octaves, when completed, two hundred and fourteen strings, making a total length of seven hundred and eighty-seven feet of steel wire, and five hundred feet of white (covered) wire. The total number of strings, when properly stretched to produce the right tone, exert a pull of over ten tons; this represents the force with which one end of the piano is drawn towards the other end, and it explains the reason why good pianos are built so strong and so heavy. Such a piano will weigh from nine hundred to one thousand pounds, and will last, with constant use, (not abuse) twenty to twenty-five years.

FOR RE-SHARPENING FILES.—The following is given by an exchange as useful and effective; but we have not tried it:—Wash the files in a solution of warm water and potash until thoroughly cleansed, after which wash the files in warm water; then put one pint of warm water in a wooden dish, in which place as many files as the water will cover; add to this two ounces of borax and two of blue vitrol, finely pulverized together. Stir up the files well and add two ounces of sulphuric acid by weight; to this add one-quarter ounce of vinegar. The files will turn red. When they again resume their natural color, take them out and wash them in cold water, after which they must be thoroughly oiled with sweet oil, and wrapped singly in brown wrapping paper which will absorb the oil from the files.

A FRENCH economist says, in his opinion Egypt alone can hide away \$20,000,000 of gold and silver annually, and the present Emperor of Morocco is so addicted to this avaricious mania that he has filled seventeen large chambers with the precious metal.

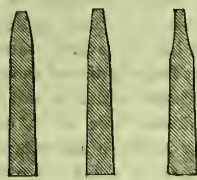
PRIZE OFFER.—The Agricultural Society of France offers a prize of 2,000 francs and a medal for the best memoir "On the Theory and Practice of Irrigation." The papers are to be sent to the Secretary before the ending of this year.

How to Sharpen a Screw-Driver.

The screw-driver is found not only in the tool-chest of every mechanic, but in most houses, and offices. It ranks with the hammer, the saw, and the ax in general utility, and yet few persons know anything about how it should be sharpened so as to do its work most efficiently—that is, with the least expenditure of power, and the least injury to the heads of the screws.

In driving a screw into wood, the force used to press the screw-driver against the head of the screw, tends to aid the latter in penetrating the wood, but when we attempt to extract a screw, every pound of pressure that we apply tends to render it more difficult to get the screw out. It therefore becomes very important that the screw driver should be so formed that it may

Fig. 1. Fig. 2. Fig. 3.



be kept in the nick of the screw by the exertion of the very least degree of force, for if it has any tendency to slip out, we can keep it in place only by applying pressure, in which case we run great risk of injuring the nick and rendering it impossible to draw the screw.

If we examine a screw-driver in the condition in which it is so ordinarily found, we shall find that it presents a section like that shown in fig. 1, in which the sides of the wedge, in which all screw-drivers terminate, are curves with the convex sides outwards. Now, the effect of thus curving the sides of this wedge, is to render it greatly more obtuse. Moreover, when we turn the screw-driver, the tendency to slip out of the nick is just in proportion to the obtuseness or bluntness of the wedge, and therefore this form is the very worst that can be chosen. In the hands of good workmen, therefore, we find that the screw-driver ends in a wedge of which the sides are perfectly straight, like fig. 2. This is a very good form, but is not equal to fig. 3, in which the sides of the wedge are curves, but the concave sides turned outwards. In this way we lessen the obtuseness of the wedge at the extreme point and produce a turn-screw which may be kept in the nick by the least possible pressure endwise.

To grind a screw-driver into this form, it is necessary to use a very small grindstone, and many of the artificial stones found in market answer admirably. Many mechanics would find it to their advantage to keep one of these small grindstones for the purpose, as it could be run in the lathe with very little trouble.

SOMETHING ABOUT TONGUES.—Nothing but the proboscis of an elephant compares in muscular flexibility with the tongue. It varies in length and size in reptiles, birds, and mamalia, according to the peculiar organic circumstance of each. A giraffe's tongue has the functions of a finger. It is hooked over a high branch, its strength being equal to breaking off large strong branches or trees, from which the tender leaves are then stripped. An ant-bears tongue is long and round, like a whip-lash. The animal tears open dry, clay walls of ant-hills, thrusts in his tongue, which sweeps round the apartments, and by its adhesive saliva brings out a yard of ants at a swoop. The mechanism by which it is protruded so far is both complicated and beautiful. A dog's tongue in lapping water takes a form by a mere act of volition that cannot be imitated by any ingenious mechanism. The human tongue in the articulation of language surpasses in variety of motions the wildest emotions of a poet. Even in swallowing food its office is so extraordinary that physiologists cannot explain the phenomena of deglutition without employing the aid of several sciences.—Hall's Journal of Health.

BRAIN WORK.—Brain-work costs more food than hand-work. According to careful estimates and analysis of the excretions, three hours of hard study wear out the body more than a whole day of severe physical labor. Another evidence of the cost of brain-work is obtained from the fact that though the brain is only one-fortieth the weight of the body it receives about one-fifth of all the blood sent by the heart into the system. Brain-workers therefore require a more liberal supply of food, and richer food, than manual laborers.

OLD LEATHER.—What becomes of all the old leather? The scraps and trimmings that fall from the shoemakers' bench are collected and sold for the purpose of being converted into "leather board" to give thickness, but not value, to the soles of cheap shoes. The uppers of old boots and shoes that are not too badly worn, are removed from the demoralized soles and made to do duty as shoes with new soles. Thousands of such uppers are sold in the various shoe marts of the country.

POTASH FROM CORN COBS.—Dr. Herbert Hazard suggests the use of corn cobs for supplying potash, the ordinary sources of which are rapidly failing. The average yield of corn cobs is 7.62 parts of carbonate of potash in 1,000 parts of the cobs, which is nearly twice as much as the best kinds of wood will furnish. The present supply of cobs would furnish nearly 58,000 tons of potash.

GOOD HEALTH.

Nature of the Brain.

It is a law of organic life, traceable from the lowest specimens of the animal kingdom, through all the ascending series, to the highest type of the human being, that, in the ascending scale, the softer and more fluid tissues gain on the more dense and solid; and that the cerebro-spinal nerve tissue gains upon all other tissues. Thus man, the crowning work of organic creation (for the present at least) has a brain substance vastly disproportionate to that of any animal, and the brain is composed of only one part of solid matter to seven or eight of fluid.

A recognition of this law leads us to some very important practical considerations. The capability of any animal or person to enjoy or suffer is in the ratio of the cerebral development. Hence a large animal with powerful muscles may struggle violently yet suffer little pain; while a human being with weak muscles and large "vivativeness," may suffer excruciating pain without manifesting much muscular effort.

If this principle were understood, those praiseworthy "Societies for the Prevention of Cruelty to Animals," might establish a branch or department for the benefit of human beings; for there is in every large city in the world, more cruelty practiced on human beings every day in the year, than on all the animals in all creation during a whole year.

Another lesson deducible from these premises is the mistaken notion about overworked brains. They cannot be overworked. They suffer little "wear and tear," because of exercise. Being soft and almost fluid, and having no duties but thinking and feeling, their motions are almost as free and frictionless as the drops of water which may toss and tumble for ever without injury.

It is the nutritive system that is at fault—the assimilating and disintegrating functions—and not the brain, when a person complains of too much head work. Let him keep his vital machinery in order, and he may work his brain to the utmost without harming it.—Science of Health.

SOUND TEETH.—Mushes, gruels, puddings, and soups, may be made hygienically. But they should also be eaten hygienically. They must be chewed, not bolted. The nursing infant masticates its mother's milk, for which purpose it takes it slowly, drop by drop. Mastication is for the purpose of insalivation. Unless food is properly insalivated, it cannot be well digested. The teeth are the finest, densest structure of the body, and this means that they are intended for hard work.

Eat solid food at every meal; and when you take semi-liquid, or very soft food of any kind, eat very slowly and take a bit of hard bread, cracker, a green apple, or something similar, with it. Then will your stomach please and be pleased, and your teeth, like your eyes and nose, and fingers and toes, will remain to bless and comfort you to the last. If all persons, after being weaned, would only chew their food enough, we should hear very little of aching and rotting teeth, and dentists would be nowhere.—Science of Health.

SPRAINS AND BRUISES.—These injuries are sometimes very distressing and their consequences very serious. The dense ligaments and membranes of the joints swell, and sometimes inflame, as the result of local injuries, and the pain is often extreme. But, simple water is about all the treatment needed. It should, however, be of a temperature adapted to the circumstances, the indication being to unload the congested vessels of the injured part as much as possible. If the part is hot and painful apply cold water or cold wet cloths, frequently renewed, until the heat becomes normal. If there is pain or tenderness without increased heat, apply fomentations until the pain is relieved. All the after dosing required in either case is a wet cloth covered with a dry one, and worn until all tenderness is gone. This simple treatment will do all that any medication can do, and is better than all the liniments and lotions, plasters and poultices, that were ever invented.

WHAT IS INSANITY?—At a murder trial in Memphis, Ky., wherein an attempt to establish insanity was made on the part of the defence, Dr. J. R. Allen was called as an expert, and testified as follows: "I have been a practicing physician for nearly thirty years; I have had some experience in cases of insanity, having been for ten years medical superintendent of the Kentucky Lunatic Asylum, and during that time had over 2,000 crazy people under my charge; I have heard the hypothetical case read by Mr. Phelan; I am here as an expert, and before answering the question would like to say that the more I studied the question of insanity the less I understood it, and if you ask me where it begins and where it ends, neither I nor any physician in the world could tell you; in fact, on occasions like this, lawyers make fools of themselves in trying to make asses of doctors."

ABSORPTION BY BONES.—M. C. Robiu states that matters injected into the spongy tissue of bones in the living subject are absorbed as rapidly as if they were introduced directly into the veins, from which he inferred that this spongy tissue is in direct connection with the veins.

Plant Life in Town.

The health of towns has become a hackneyed subject, but we seldom hear about the health of plants in towns. Yet the two are not only nearly correlated, but well-nigh identical. Were plants healthy, the inhabitants would probably be likewise, and the obverse is true. Towns in or near to which plants refuse to thrive are also those most fatal to man. The primary foundations of health in both are heat, light, food, cleanliness, pure air and suitable weather. With the single exception of heat, which, in the open air, may be assumed to be nearly equal in town and country, it must be admitted that large towns imperil the purity, lessen the quantity, and interrupt the constancy of most if not all the other essentials of health. In many large towns the light of the sun is obscured for more than one-half its shining hours. Therefore, who can wonder at the pale faces which one finds among men, women and children, and the shabby aspect of plants in towns? Heat is the great quickener, light the chief strengthener of plants. The reason so many die in dwelling-houses is that they have so little light. They linger, pine, and refuse to grow in many towns for the same reason. The pestilence that kills plants by thousands is bred of that semi-darkness which hangs as a death-pall over so many of our smoke-capped cities. When that darkness flies before the rigid enforcement of a smoke-prevention act applied to every fire, then will plants in towns rejoice, be clothed with new strength and adorned with fresh beauty.—The Garden.

LEAD POISONING.—Since attention has been directed to the subject, cases of lead poisoning, traceable to the use of hair-preparations containing lead, are found to be very frequent. A case of this sort was recently reported in the medical journals, which was at first mistaken for muscular rheumatism, and treated as such with but slight amendment. Paralysis of the extensor muscles of the fingers and hands, with "wrist-drop" coming on, the true nature of the affection was seen, and its cause readily found in the frequent use of a hair-renewer containing a large proportion of sugar of lead. No lines were seen upon the gums, but attacks of colic had been frequent. Discontinuance of the hair-dressing, and a resort to the ordinary remedies, soon affected a cure.

BATH TREATMENT FOR THE SMALL-POX.—An instance of the effect of the bath treatment for small-pox is thus described by Dr. Stokes, of Dublin: In a very severe case of confluent small-pox in which the patient was kept alive only by stimulants, the trial of the warm bath was suggested. The effect was instantaneous and marvellous. The delirium ceased as if by magic. It was the delirium of pain; and the patient exclaimed: "Thank God! thank God! I am in heaven! I am in heaven! Why didn't you do this before?" The fever immediately and completely disappeared, so that, on entering the ward, no one could suppose that there was a case of small-pox in it. He was kept at least seven hours in the bath.

HOW TO MAKE A NEW NOSE.—The method usually practiced is as follows: A small piece is opened upon the arm, between the elbow and shoulder. The arm is then brought up to the stump of the nose, which is inserted in the cavity previously made. The arm is next tied to the head, and allowed to remain in that position until the nose and arm grows together, which ordinarily occurs in less than a month. Another amputation then takes place, which leaves plenty of good flesh sticking to the nose, and this, when trimmed, is a nose as good—sometimes better in a point of symmetry and beauty—than the individual ever possessed before.

STIMULANTS AND NARCOTICS.—A recent German treatise on stimulants and narcotics estimates that infusion of coffee leaves is used by two million persons, Paraguay tea by ten million persons, chicory, either pure or mixed with coffee, by forty million persons, cocoa, either as chocolate or in some other form, by fifty million persons, and coffee by one hundred million persons. Betel is chewed by one hundred million persons, hashish is chewed or smoked by three hundred million persons, and opium is used by four hundred million persons. Chinese tea is drunk by five hundred million persons, and tobacco is smoked, chewed or snuffed by the greater part of the inhabitants of the world.

FOR REPTILE BITES.—One tablespoonful of gunpowder; one tablespoonful of salt; the yellow of one egg. Heat them altogether, so as to form a plaster, and apply to the wound. A yellow water will issue, and when the plaster becomes soaked with the poison it will fall off. Renew the plaster until it will adhere to the wound, which is evident that the poison has all been drawn. The above is said to be a very effective antidote.

FOR STINGS OF INSECTS.—A good, convenient and very effectual remedy for the stings of wasps, bees, etc., is simply to hold any hollow key, over the place stung, press it hard into the flesh for a minute or so, and when taken off, the poison will be on the surface of the flesh and do no harm. A thimble with a tight top will do but not quite as well.

INFALLIBLE REMEDIES.—For corns, easy shoes; for bile, exercise; for rheumatism, new flannel and patience; for gout, toast and water; for the toothache, a dentist; for debt, industry; and for love, matrimony.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.
PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....J. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

SUBSCRIPTION AND ADVERTISING RATES.

Subscriptions payable in advance—For one year \$4; six months, \$2.50; three months, \$1.25. Clubs of ten names or more \$3 each per annum. \$5, in advance, will pay for 1½ year. Remittances by registered letters or P. O. orders at our risk.

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SAN FRANCISCO:

Saturday, June 15, 1872.

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The State Fair.

The indications are that the California State Fair will far exceed this year any fair of the kind ever held in the State. The visiting committee are traveling among the producers and exhibitors, and give most flattering accounts of the prospects. Col. Younger, of the committee who has been among the cattle, sheep and goat men of the Southern Counties, writes to the Board of Directors as follows.

"I must say that I have never seen any people in better spirits. Their crops are looking splendidly, and stock the same.

There will be the largest exhibition of sheep and angora goats and their grades that has ever been made at any fair in the United States. You will have to make more room for sheep and goats. From this section alone, there will be from three to four hundred head of sheep and goats. They are preparing to contend for every premium offered—in other words, they intend to make these departments a success at the State Fair. The prospect is that the coming fair will be the greatest exhibition ever held in any State in the Union. Great interest is manifested everywhere."

SEEDS FROM WASHINGTON.—We acknowledge receipt of some small parcels of newly imported European and Asia Minor, flower, melon and other varieties of seeds.

RASPBERRIES.—Black raspberries from the ranch of John G. Briggs, have made their appearance in market.

FARMERS' daughters who are handsome are the best kind of agricultural fairs—for their sweethearts.

Interest in Agriculture.

At the present time, we think it safe to say, there is more interest manifested in the success of agriculture in all of its departments, by the people of the State, than at any previous period. The business men of the towns and cities are now manifesting a lively interest in the success of the agricultural enterprises of the State. All are buoyant over the bright prospects of the grain crops—all are happy and content in the success of those who own sheep and who have obtained highly remunerative prices for their wool. All are glad the fruit growers are sure to find an unlimited market for their surplus fruits either in the State or the States and Territories east of us, at good and profitable rates.

All are watching with considerable anxiety and a good deal of hope for success to the efforts of those who are engaged in the cultivation of cotton, ramie, silk, New Zealand flax and other comparatively new products in the State. Farmers' clubs are being organized in many of the important towns for the discussion of subjects of interest, not only to the farmers, mechanics and merchants as individuals, but to the general good of the localities and the State at large. District and Agricultural Societies are being formed, not only in the valley districts, but in the foothill counties as well, for the purpose of holding fairs for the exhibition of the products of industry, the gratification of local pride and fostering of local enterprise.

Farmers are consulting with mechanics and manufacturers and urging and encouraging them to engage in new branches of manufacturing industry and promising them their substantial support and custom. Business men and capitalists are discussing new railroad schemes and routes, for the purpose of opening up new sections of country and developing their resources and reduce the expense of moving their products to market. Indeed their seems to be a new energy prevailing all classes of the community, arising, as we believe more than from any other source or cause, in the confidence inspired by the prospects of abundant crops and remunerative prices.

Success in agriculture is more and more coming to be considered in California a condition necessary to success and prosperity in all other branches of industry, hence the increased interest manifested by all classes in the calling of the farmer.

As publishers of an agricultural journal we feel this increased interest in the industry which is our specialty, very sensibly in many ways. In our rapidly increasing subscription list, coming as our subscriptions do from all classes of the community—the merchant, the mechanic, the lawyer and the general business man, as well as from the farmers themselves, we are thus advised of the generally increasing interest that is being awakened in the success and development of our agricultural enterprises and resources in the increase and variety of our correspondence.

As the interest in every branch of industry increases in any community just in that proportion do the correspondents and inquiries increase, and thus again we are admonished of the channel in which the public and general mind is running.

The Effect.

The effect of this tendency of the day cannot be otherwise than beneficial in every light in which it may be considered. Agriculture is and must always be the foundation and surest source of our State's prosperity. All other industries will flourish or slacken, as agriculture is successful or unsuccessful. And agriculture will, in this State, as in all other countries, succeed or fail, as those engaged in it are intelligent and enterprising, or ignorant and shiftless. In this view of the case, we can see in the future, California agriculture brought to the highest degree of perfection and prosperity, and as a consequence, all the other industries enjoying a proportional success.

SANTA CLARA county only ships about 40,000 pounds of strawberries per day. Last year, the shipments from the same locality, were about 80,000 pounds per day, for several weeks.

A NATION whose rural population is content to live in mean huts and miserable hovels, is certain to be behind its neighbors in education, the arts, and all that make up the external signs of progress.

Stock Moving to the Mountains.

What we say in this connection and what we have procured from a perfectly reliable source, is for the purpose of answering one of our numerous Eastern correspondents; one who asks how we manage to feed the immense dairy stock and other herds of our State, through the long season of certain summer drouth; when—as he says with much truth—if the same should occur in the Atlantic States, certain ruin to the season's prospects would be the result.

The season is already upon us when the annual migration of stock from the lower Sacramento, San Joaquin and Tulare valleys, to the plateaus and valleys of the mountains commences. Owing to the abundant rains of the past winter season, the grass of the lower valleys has been better and has continued green later than it has for several years past; this with the fact that large bodies of snow are still covering the mountain summits, and in many places extending down their sides, cooling the surrounding atmosphere and retarding vegetation have conduced to delay somewhat our annual stock exodus to the great mountain valleys.

This migration of immense herds from one part of the State to another for fresh feeding grounds, would not be in itself, anything remarkable, or is not, to some of the great Western States, as Texas and Arkansas; but to remove whole dairies of hundreds of cows, to high, mountain valley pastures, with all the paraphernalia of housekeeping and butter making, to be isolated from the lower world for full four months, during the great heat of summer and then to return on the first approach of autumn snows, to the warmer valleys of the lower plains for winter, is a feature that pertains to no other State in the Union.

How it is Done.

Having addressed a letter of inquiry to one of these nomadic dairymen, asking for such information as he felt willing to impart, in relation to the general routine of a season's operations, we give his answer *verbatim* as we received it.

"You ask for my experience in butter making in the mountains, the peculiarities of mountain pastures, etc. Well then, I remain upon my Sacramento Valley ranch till about the 10th or 15th of June, marketing my butter in Sacramento. Now as the weather gets so hot as to require the sending of butter to market at night, to be kept in perfect order; and I see a perceptible falling off in the quantity of milk from my cows, the effect of the drying up of the grass and herbage, these admonish me that the time has arrived for my annual move to my mountain-locked meadow home.

The big wagon is brought out and loaded with the "traps and fixens" necessary to conduct our butter establishment. The cows that are to compose our milk-giving herd numbering from 90 to 120, are put in motion by the men; whilst we, the Mrs. of the establishment, my two boys and myself with wagon, follow in train; and in four days we have made a distance of 65 miles into the mountains, not in search of pasture, but to arrive at my own beautiful natural meadow of grass and clover, of not less than five hundred acres, away from any thoroughfare a distance of 5 miles, and where we expect to see no one for the entire summer, that does not come to see us.

Our Mountain Home.

Our home and locality is, in reality, a paradise for a dairymen. By the middle of June the grasses and clovers are always abundant. A fine, cold, clear stream of water, in fact two of them course along the meadow its entire length, their union forming a considerable creek, the home waters of myriads of speckled trout. The meadow is so nearly mountain locked, that less than half a mile of brush and log fence secures the stock, if they had any desire to stray.

Our dairy house is of logs, a structure now of five years standing, large and commodious for simply butter making. In the milk department, a small branch of the creek flows into a large, shallow tank, in which are set the milk pans, till the cream rises and is taken off, the skimmed milk is fed to the calves and pigs, which always make a part of our mountain herd. It is unnecessary to describe my process for butter making; we do, however, intend always to make scrupulous cleanliness a *sine qua non*, in every department.

Keeping the Butter.

I pack my butter in stone pots and jars, to remain here, immersed to within one inch of their rims in cold running water; or as we occasionally do when opportunity offers, send a lot below packed down in snow, an abundance of which is obtainable within a half mile of our dairy house. Butter made from mountain clover and the bunch-grass of our hillsides and packed as we pack it, brings a higher price in any market during the fall and following winter, than does the best fresh made butters of the lower valleys.

Going Below.

When the indications are clear, that the win-

ter's snows are soon to close around us, if we much longer remain, we send below for sufficient team and wagon room to convey away our summer's product. A day or two, and our loads are ready; we strike tent, close up the dairy house, and with our animals, descend to the milder clime of the lower valley for the winter.

I might say much of the beauties of our mountain valley; its cool, invigorating, health-giving climate; the berries, the wild fruits, and game, that everywhere abound; but as you asked for nothing of these, I shall omit to speak further of them. Hoping that I have succeeded in answering your inquiries in accordance with your wishes, I remain yours truly
S. S."

Farmers' Clubs.

All through the agricultural counties we hear of the organization of Farmers' Clubs; among the more recent is that of Napa County, whose organization is one that cannot fail to call out some of the best experience of the State. With soil and climate unsurpassed, a county occupied by farmers of culture and intelligence, engaged to a very large extent in more of a mixed husbandry than perhaps any other community of equal extent in the State, including stock, vineyard, fruit and grain-growing, the operations and discussions of this club will be watched with much interest.

As the object of these clubs is to compare notes, and listen to the testimony of practical workmen, relative to agriculture and its collateral interests, rather than listen to essays copied almost word for word from some acknowledged standard work, we shall expect to obtain practical and useful truths pertaining to subjects that may come under discussion. We hope to be able to obtain the regular discussions of this, and every other Farmers' Club in the State, for publication, at the earliest practicable moment.

Cultivate your Root Crops.

It is quite useless for the slovenly or negligent farmer to attempt the cultivation of root crops; for being of slow growth at first, generally produced from minute seeds, and requiring much labor, as compared with corn, wheat and other grain producing plants, he will be sure of failure. In fact the so-called gardens or "truck patches," of many otherwise good farmers, are a by-word and laughing stock to the passer-by, the home of every vile weed that will grow in the district.

In a climate like ours, in which hardly a weed grows or attempts a growth after the last rains of the season, usually in May, it is simply a disgrace to the profession of crop or root culture, that the weeds should not be kept thoroughly down from the time of planting to the close of the spring rains, when nature does the work for the rest of the season gratis. Keep down the weeds.

Cattle Husbandry.

California is steadily but surely passing from a State of half civilized, to that of a civilized country and people. The rudest form of husbandry known, is the occupation of a herdsman; it is really but one remove from savage life, inasmuch as the savage hunts, kills and eats wild animals; the herdsman breeds, slaughters and eats domesticated or half wild cattle. The big-horned half wild cattle of 1848-50 are now hardly known throughout northern and middle California; they have given place to improved or civilized breeds and now with the gradual adoption of the No-Fence law, even these will be kept under restraint and the true and only legitimate husbandry of mankind, adapted to civilization and refinement—a mixed husbandry—will at length predominate.

SOWING AND HARVESTING IN JUNE.—While the gathering and threshing of wheat is now briskly going on in the valleys and plains of many parts of California—the tule lands are yet being sown with the same kinds of grain. Oats and barley will continue to be put in still later on the reclaimed tule lands; and corn, for green corn or roasting ears, as late as the first of August.

RIPE PEARS.—The first pears of the season made their appearance in the Sacramento market on Saturday, the 8th of June. They were sold to dealers at ten cents a pound. On Monday the 10th, they were brought in considerable quantities, and were disposed of for shipment at eight cents per pound.

Wool Circular.

We have received the monthly wool circular of Walter Brown & Son, of New York, for June 1st, from which we quote as follows:—

The dullness in the wool market which we noticed in our April and May circulars, has continued unabated up to the present time, without any apparent indications of a speedy change for the better; except the fact that many manufacturers will be soon compelled, from sheer necessity, to enter the market in order to replenish their nearly exhausted supplies of raw material.

The causes which have operated to depress trade are various, the most prominent being—the slight decline at London sales—the uncertainty as to the proposed reduction of duties—the unsatisfactory condition of the woolen goods market—the usual bear movement of manufacturers at the approach of a new clip, together with the large arrivals of foreign wools within a few weeks.

The long protracted dullness has developed weakness among some holders which has contributed towards bringing about a lack of confidence as to future prospects,—although the more general feeling is that the bottom has been reached, and that the tendency will be towards improvement so soon as a better demand springs up.

Amid all the unfavorable circumstances which have prevailed, values have very naturally declined, and the bulk of transactions, (which have been foreign wools), have been effected at prices at which it would be impossible to replace the present stock from abroad.

In the West the disproportionate views of growers may result in a slow movement of the crop, unless there is a recurrence of the intemperate action of buyers which has been exhibited in many former years.

As yet there is but trifling movement of the new Wools, and prices are not fully developed.

CALIFORNIA WOOLS.—Transactions continue on a limited scale, and sales have only been effected at a considerable decline.

OHIO, PENNSYLVANIA AND VIRGINIA.

Choice selected Saxony fleece.....	80	@	85
Saxony fleece.....	75	@	80
Three quarter and full-blood merino.....	75	@	80
Half blood-fleece.....	72	@	78
Quarter-blood fleece.....	70	@	77
Common fleece.....	70	@	7

CALIFORNIA.

Spring clip, fine.....	44	@	48
Spring clip, medium.....	45	@	48
Spring clip, low grades and burry.....	38	@	42
Fall clip, A 1.....	38	@	42
Fall clip, low grades and burry.....	30	@	35

Compare the prices of Eastern grown wool with those of California and we see at once, that with only half the sheep, but those well kept, they realize more money than we do from double the number of poorly cared for and low grade animals; and yet we boast of our superior advantages for sheep growing.

The Hydraulic Ram.

EDS. PRESS:—Being a subscriber to your valuable paper, I wish to ascertain something about the working of a hydraulic ram, through your columns. I do not understand anything of the workings of the ram, the number of feet they will force the water, the amount of water needed to work them or the quantity of water forced up the elevation, the cost of the ram, pipe, etc., and where they can be purchased. If you can answer my question you will confer a favor on

G. C. I.

Bear Valley, Colusa Co., May, '72.

We have received numerous queries similar to the above during the past year, from which we infer that much attention is being given to this mode of supplying water for household and farm purposes. It is in view of this that we have had an engraving prepared from an original drawing, giving a view of the working parts of the machine, which, with the accompanying description, will give a clear insight into the principle upon which the machine works. The table appended will also enable the reader to judge of the size of the ram which he may require to meet his needed supply, or to utilize the amount of water he may have at his command. The illustration which is herewith given differs from any with which we have met in any of the technical works of the day, and shows the machine in its most improved construction. We have examined some of these machines, for sale by the importers, Messrs. Brittan & Holbrook, of this city, who can be consulted fully with regard to prices, etc., which we believe range from \$9 to \$60, according to the size of the machine.

Philosophy of the Hydraulic Ram.

Fluids are subject to the same law of gravity as solid bodies, and a mass of fluid descending vertically has its motion accel-

erated in the same manner as a solid mass, and the momentum generated is the product of its quantity of matter and velocity. If a column of water moves through either a vertical or an incline pipe, it acquires a velocity, which from the friction of the pipe will soon become uniform, and the momentum generated will be measured by the mass, multiplied into the uniform velocity; new force is also necessary for the destruction of motion, and the shorter the time through which it acts the greater is the effect produced. Thus a small hammer of steel is more effective against a nail than a mallet twenty times its weight, both moving with the same velocity. By the density of the face the motion is destroyed instantly, and instantly received by the nail. In the mallet, motion is communicated gradually, and diffused more or less over the body into which the nail is driven.

The sudden destruction of motion in fluids as a mass is attended with effects precisely analogous. When the motion of a large body of water is suddenly stopped, the surface which stops it sustains a great force. The pipes of our hydrants are sometimes burst when the stop-cock is suddenly shut off.

The power of the hydraulic ram is con-

forced into the chamber C, and supplies the deficiency. In small rams the opening is not necessary.

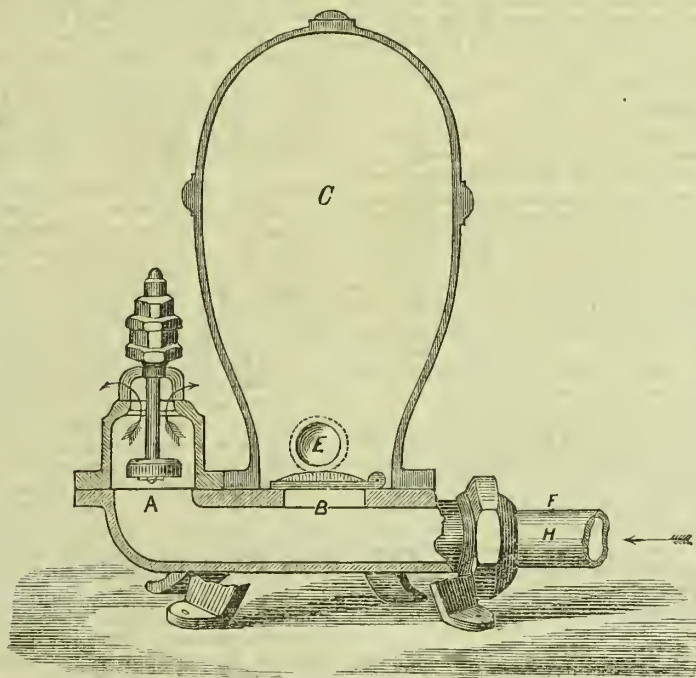
The annexed table has been prepared to show the useful effects of this device for raising water, designating the capacity of various rams, with the necessary appendages of pipe, etc.:—

Size of Ram.	Amount of Water Delivered Per Minute.	Conduction.	Diameter of Pipes. Inches.	Discharge.	Weight of Ram.	Space Occupied.
2 3 quarts to 2 gals.	1 1/2	1	3/4	22 lbs.	1 cubic ft.	
3 1 1/2 " " 4 " "	3	1 1/4	1	29 " "	" "	
4 3 " " 7 " "	4 1/2	1 3/4	1 1/4	35 " "	" "	
5 6 " " 14 " "	6 1/2	2	1 3/4	55 " "	" "	
6 1/2 " " 25 " "	8 1/2	2 1/4	2	125 " "	4 cubic ft.	
7 1/2 " " 40 " "	10 1/2	2 3/4	2 1/4	150 " "	" "	
10 1/2 " " 75 " "	12 1/2	3	3	200 " "	18 cubic ft.	

The above table is calculated for a conduction pipe, with a head not exceeding ten feet, with 25 to 30 feet length of conduction pipe, and 50 to 100 feet height of discharge pipe.

If the ram be placed under a greater head or fall than designated in the above table, then the strength of the conduction pipe must be increased—that consequently increasing the weight; also, should it be necessary to force the water to a greater height than those mentioned, the discharge pipe must be increased in thickness in proportion to the pressure exerted, and the diameter enlarged.

If the head of water be over that given



THE HYDRAULIC RAM.

structed on this principle, being an impulsive machine, deriving its power from the work accumulated in the water which supplies it.

In the illustration herewith presented, A is a valve which opens downwards, allowing the water to escape, and so produces a current down the conductor pipe H; the water acquiring a sufficient velocity will close the valve A. The motion is thus suddenly stopped, causing a reaction and a pressure sufficient to open the valve B, and forces water into the chamber C. The pressure overcome, the valve A falls by its own weight, and the current again directed towards the opening A, the pressure at B being removed, the valve falls and closes the chamber C. The ram is now in the same condition as at first. The water acquiring a sufficient velocity, closes valve A, and is forced into chamber C, and so the action continues.

The space C is an air chamber, from which the supply into the discharge pipe E is steady. If a ram be used to raise water to a great elevation, it would be subjected to a great inconvenience that would soon destroy the benefit of the air chamber, from the fact that if the air be subjected to great pressure, it will in time be incorporated by the water, and to remedy this a very small hole should be made in the upper side of the pipe H at F. Where the rush of water is suddenly stopped by the valve A, a partial vacuum is produced below the air chamber by the recoil of the water and air enters at F, and is afterwards

in the table, then a smaller sized ram will furnish the same quantity of water as a larger one under a less head. For instance, a No. 4 would be of sufficient capacity, under a head of 8 or 10 feet, to deliver 7 gallons per minute; whereas if the head was but 3 or 4 feet, a No. 5 would be necessary to deliver the same amount. If the head is a large one, and a greater supply of water delivered be required than one ram will supply, then increase the number of rams, for several rams can be erected so as to deliver into one discharge pipe, each ram having a separate conduction pipe to its head. There is a governor attached to these rams, by which the supply is regulated, and the quantity delivered is not affected by the rise and fall in the head.

MILK SWINDLE.—The New York Tribune publishes a long list of milk swindlers in that city. "It is estimated that 75,000 quarts of water are daily sold as milk, and that through adulteration New York housekeepers are robbed yearly of \$2,700,000; add to this the Brooklyn loss, and the total swells to \$4,000,000. The farmers sell pure milk to the dealers, but the dealers increase their profits by adding to the supply obtained every morning a certain quantity of water.

GONE NORTH.—Director Younger and Corresponding Secretary Hoag of the Visiting Committee of the State Agricultural Society, are on a trip among the farmers of the northern portion of the State, waking up an interest in the coming State Fair. They are succeeding admirably.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

(FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.)

FOR THE WEEK ENDING MAY 21st, 1872.

PROCESS FOR PRESERVING IRON.—William H. Sterling, New York, N. Y.

APPARATUS FOR LIGHTING GAS BY ELECTRICAL SPARKS.—John Vansant, San Francisco, Cal.

TUNNELING MACHINE.—Alexey W. Von Schmidt, San Francisco, Cal.

FOR THE WEEK ENDING MAY 28th, 1872.

MANUFACTURE OF ICE AND REFRIGERATING MACHINES.—Samuel B. Martin and John M. Beath, San Francisco, Cal.

HOSE-CART.—William E. Shaw and Charles A. Ashley, Stockton, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of mention:

STAVE WORKING MACHINE.—Lamartine R. Fulda, San Francisco, Cal. This is a machine for working or manufacturing cask, tank, and barrel staves, and completes them ready for use, from the rough bolts of lumber. It consists in the use of a movable carriage provided with clamps for holding the rough bolt of wood. This carriage being made to pass the shaping saw guided by an adjustable curved gauge so that the proper shape shall be given to the stave. The stave is then laid upon an adjustable table, and made to pass a cutter, which gives the proper bevel to the edges. From there it is placed on another curved table and passed under a cutter which does the crozing, forming the grooves for the head. The first mentioned carriage has also a device for getting the center line transversely to the staves for the purpose of setting up correctly.

GRAPE CRUSHER AND STEMMER.—Geo. Johnston, Sacramento, and Wm. A. Johnston, of Folsom, Cal. This improvement relates to that class of grape stemmers and crushers in which a series of beaters are revolved inside of a box or case, the lower portion of which is formed of parallel slabs. In this class of machines, as ordinarily made, the grapes are crushed in separate charges, and the stems thrown out of the case after the grapes are crushed, by opening one side of the case so as to permit the revolving arms to hurl them out. This improvement consists in a peculiar construction of the case and revolving beaters, by which the grapes can be continuously fed into the machine at one end, while the stems are automatically discharged from it at the other end.

CLOTHES DRYER.—Anson C. Stowe, San José, Cal. This is an improvement in extension racks for drying clothes, which are hung upon a wall, and are so constructed as to permit of their being partially closed so as to throw the main portion out from the wall. It consists in the employment of ropes or cords for supporting the parts of the frame in the cramped position when they are being used, and connecting these cords by means of rods, which also serve to hang small clothes upon.

CLASP FOR SIDE ARMS.—F. A. Will and Julius Finck, San Francisco, Cal. This is an improved clasp such as is used in attaching or suspending the scabbard or holsters of side arms from the belt or waistband of the person carrying them. By means of this device the attachment can be quickly made and the scabbard or holster is not liable to become unfastened or lost.

TOOL-HOLDER.—F. A. Will, and Julius Finck, San Francisco, Cal. This invention is an improved handle or holder for small tools, such as are used by dentists, etc. This handle is capable of serving for any number of small tools, such as excavators, burr-holders, and like instruments. This and the foregoing invention, are in the line of the practical work of the inventors, Messrs. Will & Finck, and seem to be decided improvements.



Things that Never Die.

The pure, the bright, the beautiful
That stirred our hearts in youth,
The impulse to a worldly prayer,
The dreams of love and truth;
The longing after something lost,
The spirit's yearning cry;
The striving after better hopes—
These things can never die.

The timid hand stretched forth to aid
A brother in his need,
The kindly word in grief's dark hour,
That prove a friend indeed;
The plea for mercy softly breathed,
When justice threatens nigh;
The sorrow of a contrite heart—
These things shall never die.

The memory of a clasping hand,
The pressure of a kiss,
And all the trifles sweet and frail
That make up life's first bliss;
If with a firm, unchanging faith,
And holy trust and high,
Those hands have clasped, those lips have met,
These things shall never die.

The cruel and the bitter word
That wounded as it fell,
The chilling want of sympathy,
We feel but never tell;
The hard repulse that chills the heart,
Whose hopes are bounding high,
In an unfaded record kept—
These things shall never die.

Let nothing pass, for every hand
Must find some work to do;
Lose not a chance to waken love,
Be firm and just and true.
So shall a light that cannot fade
Beam on thee from on high,
And angel voices say to thee,
These things shall never die.

Farm House Chat.

How fortunate that Faith Rochester is on the other side of the continent, and so not likely to be disturbed by blunders that happen on our side.

My last chat was really too long, and I can hardly blame the reckless "typo" who knocked a few lines of it into the pi, and thus managed to bring in Faith Rochester guilty of the authorship of Gail Hamilton's last book—"Woman's Worth and Worthlessness."

Such injustice to both writers can hardly be allowed; and I hasten to restore to its rightful owner the highly seasoned volume that, like cayenne pepper or freshly cut onions, diffuses pungency and tingles smartly to the very founts of feeling. Gail's book would not help us much in the way of contentment, for it is terribly soul-searching enough to set the feeblest brain in a whirl—not with the question, "Can I have patience to endure this tame, inglorious existence," but rather "Have I the courage, the faith, the genuine womanly grit, that is needed to make my life what it ought to be?"

If our response to this is languid or faltering, we may still be glad that Gail's busy pen never falters in its rousing antagonism to everything false, frivolous, narrow and shallow in the mental and moral make-up of the modern woman.

Her strong plea for the preservation of woman's personal beauty, has, doubtless grown out of her intense pity as she has seen hearts of gold looking out through prematurely faded, care-worn faces, and has said to herself, "What radiant difference here might have been if the outward comeliness could also have taken care of itself."

And yet, and yet, O, Gail! is it not true that hearts of gold, are purchased by just that sacrifice of itself—just that possibility of giving and doing without stint for the comfort and happiness of others.

'Tis true, the hard working husband accepts our labor as a matter of course—"has all his life been used to seeing women work, and is not overmuch troubled thereby;" but do not we also accept his labor as a matter of course?

'Tis true, "the little children don't know enough to thank us" now; but if our labor and self-denial for them is so truly and wisely given as to help them become good men and women, will not their gratitude and love brighten our declining years? Will not the kind mother-face be ever beautiful in the eyes of those children who finally *do know* what weary burdens she bore for them during their helpless, thankless baby-days?

If the revolutionary Mothers of glorious memory had refused to harden their hands with labor, or wrinkle their brows with the great anxieties of that intense period, how different would be the song and story with which we halo the date of our nation's birth!

Fathers and mothers who daintily cherish softness of palm and freedom from wrinkle, may do "nicely" to embellish the period of a nation's luxury and grandeur; but for the planting of nations and States, for rearing of hardy, vigorous children, men and women are needed who can handle work without gloves—can give the best they have of brain, muscle, youth and beauty for the creation of a future that will be bright and easy for somebody after their own tired bones have been laid to rest. Too great a sacrifice is this for mortal man or woman? Yet many have thus won immortal fame. It would be easy I know for Gail to answer that the fame does them no good, and so they might as well have taken life easily, and spared themselves so much backache and untimely plaiting of crow's feet. But their fame does us good, and I can't see how we could get along without it. What a blank in history if the Pilgrim Fathers and Mothers had not dared to grapple with terrible hardship, suffering, toil and death.

If the brave Western Pioneers had not taken hold with their tough hands, and eaten bread in the sweat of the brow! It was not enough that men alone should undertake the great work. To plant homes worthily, woman's toil and care were also needed; and hallowed be their memory!

Human invention may so lessen the demand for labor, that beauty in either sex may claim royal right of exemption from hardship; that is, if happily there be enough "homely ones" to run the machines and keep the world moving. This reminds me that pioneering has so nearly conquered the land—invention has already so modified and mollified labor—we may as well straighten our tired backs, and look sharply along this middle ground of life for such share of leisure and "higher pleasure" as we are capable of enjoying; and when we have found our leisure, we must do something with it, or, as friend Nehemiah says: "It will sour on our hands."

The true farmer who enjoys watching the growth of promising crops and choice young cattle, will not laugh when told that higher pleasures for wife and children may find a starting point in just such a pretty door-yard as Mr. and Mrs. A. M. are about to bless themselves with. What rare courage had she to put her wish so rarely in print, and give us also the example of her thoroughbred patience that still could wait till next November, after all the five years.

We laughed heartily over the husband's cheerful response; and reading it aloud at the table, I could see that Mr. Mountain glowed with secret satisfaction over the fact of our little yard—two months old, and already paying for itself with posies and vegetables. Looking that way, we see the tall picket fence inclosing the orchard, and remember that it was built by the hands of a woman, who worked too hard early and late, and died early—five children left motherless. This indicates a dark side of our question, and the necessity of warning a few men and women that they have no right to make martyrs of themselves at this poor dying rate. Statistics claim however, that idleness eats away life faster than labor; and we are all familiar with the saying—"I would rather wear out than rust out."

Let us then strive for the golden mean of cheerful industry, just enough of it to keep us bright and healthy; but guard against sinking into mere drudges with no spirit or courage to make sure of the goodness and beauty that ought to blossom in all our lives.

To accomplish this, each person must be guided by conscience and capacity; for, don't you see, the amount of work that will make a sorrowful drudge of one person, will, by another of different temperament, be so blithely dispatched as to seem a mere matter of moonshine, and leave ample margin for leisure and all the modern refinements.

Head Gear.

No item of the toilet changes a woman's appearance more than the way she dresses her head, consequently the art of arranging the hair in a becoming style is worth considering, although not as important as many women make it, by giving all thought and time to the outside, and none to the inside of the head.

A fine head of hair is beautiful to look at, but does it pay for the investment of time and labor required in the care of it?

Such hair needs little ornamentation besides the beauty of its own glossy braids, buffs or curls. The changes of fashion in ribbons, false curls, bands and braids, are not made for those who have plenty of natural adornment. It is an insult to the generosity of nature, to spoil luxuriant hair by mixing in a lot of false, dead hair. Nobody has hair enough to wear in the most elaborate of the present fashions, which alone bespeaks their absurdity.

The unnatural heat produced by these fashions are causing much needless pain in headaches and fatigue in carrying the burden.

How long would a man of sense have his head enveloped in a cushion of mohair, jute, horse-hair or dead human hair, whichever he could afford to buy? Imagine him in this plight at the desk in the counting-room, or pursuing his daily labor where a cool head is necessary to achievement.

Men and women present a strange contrast in this respect. Men plan, work, scheme, think, think and think over questions involving individual and national progress, until their brains burn up in fever. Women envelop their head in a hotbed of fuss and feathers, and while the heat is working disease, they plan and rearrange the imposing structure, making it heavier and warmer, all for the sake of looking pretty, until fever, headache and low spirits are produced. What a useless expenditure of time and strength!

Men do not care if they are baldheaded, gray-haired, red-headed, straight-haired or curly, if they only have the investment inside, which is a good stock in trade or a profession, to insure prosperity in life.

Why should not women think more of sense and ability than of looks? Surely there are not enough beauties in the world to secure success merely on that basis. And it is a humiliating fact to the senseless doll-beauties who spend all their time in studying "effects" for themselves, that homely women of wit, sense and learning win all the lasting laurels and receive the most attention, a fact that ought to work a reform in countless idle, useless lives. If short hair is so much more convenient and beautiful for men, why is it not the same for women? Despite the prejudice against this simple style, many women have adopted it and find it in every way the most agreeable. Of course this fashion can never be popular with those who have badly shaped heads, so long as they can take shelter and conceal defects under fortifications of puffs and braids, that is, if they care more for looks than comfort.

However, whether long or short, a simple arrangement of the hair which is productive of as little heat as possible, is most desirable.—*Elm Orlou.*

About People.

GENTLE PEOPLE.—The young lady who lets her mother do the ironing for fear of soiling her hands, the miss who wears thin shoes on a rainy day, and the young gentleman who is ashamed to be seen walking with his father.

INDUSTRIOUS PEOPLE.—The young lady who reads romances in bed, the friend who is always engaged when you call, the correspondent who cannot find time to answer your letter.

HUMBLE PEOPLE.—The husband who does his wife's churning, the wife who blacks her husband's boots, and the man who thinks you do him much honor.

PERSECUTED PEOPLE.—Woman by that tyrant man, boys by their parents and teachers, and all poor people by society at large.

TIMID PEOPLE.—A lover about to pop the question, a man who does not like to be shot at, and the steamboat company with a case of cholera.

MEAN PEOPLE.—The man who kicks people when they are down, and the subscriber who refuses to pay for his paper.

UNPOPULAR PEOPLE.—A fat man in an omnibus, a tall man in a crowd, and a short man on parade.

UNHAPPY PEOPLE.—Old bachelors and old maids.

SENSIBLE PEOPLE.—You and I.

Young Folks' Column.

Learning to Count.

"Now boys, you want to be men some day, don't you?"

"Yes, sir."

"Well, what do you mean to do when you grow up?"

"I mean to be a sailor, sir."

"I'm going to be a grocer."

"And I, a butcher."

"I mean to help mother, sir," was the shrill cry of one of the tiniest of all the little crew.

"That's right!" said I. "Never forget mother; always try to help her. But if you are to be all these things—grocers, butchers, and all sort of things—you must first of all learn a great deal, and none of you will be able to get on very well if you are not able to count quickly and reckon correctly. If you mean to be good successful men of business, you must have your heart right and your head clear. Always be sober, and your heads won't get muddled, as many people's are. Now suppose we take a lesson in counting as far up as ten, and, to help you to remember the figures, I will give you a rhyme for every one. Here goes!"

"Number one, The Beer-Shop shun.

Number two, Nor drink, nor brew.

Number three, A teetotaler be.

Number four, Keep drink from the door.

Number five, Abstain and thrive.

Number six, To teetotal fix.

Number seven, Be to temperance given.

Number eight, Don't be caught by the bait.

Number nine, A mocker is wine.

Number ten, Be teetotal, then."

Ants.

Oh dear, Mitty, these troublesome ants are in this box again. You said once that God made everything for some use, but I can't see any use in these little troubles."

"Dear little sister, 'these little troubles,' as you call them, can teach us many lessons. They are very ingenious in building their houses. The mason and carpenter ants do very smooth work, and it would be quite a puzzle for you to trace the windings of all their chambers and galleries. What would you think if you should see a house five hundred times as high as yourself? It would be higher than the pyramids of Egypt; yet the termite ants build houses five hundred times their own height. Some of their rooms are above ground and some below. You see by that arrangement they have rooms for all kinds of weather.

"There is a species of white ants in Africa, and travellers say they exhibit more skill in building their houses than the native negroes do. Ants are always busy, and each individual one has its work to do. They carefully prepare in pleasant weather comforts for a stormy time. They are also very persevering. So, little sister, you see God intended we should learn some lessons of usefulness from them, and it is a good discipline for our patience when they get into our boxes. God put it into the heart of wise king Solomon to tell lazy folks to study the ways of the ant, 'and be wise.'"

We've Got It.

Dolly.
Dolly Varden.
Dolly Varden hats.
Dolly Varden balls.
Dolly Varden jewelry.
Dolly Varden cocktails.
Dolly Varden grave yards.
Dolly Varden potato bugs.
Dolly Varden, horses, cats, dogs.
Dolly Varden dinners, houses, servants.
Dolly Varden cigars, pantaloons, coats, vests.

Dolly Varden something, anything—everything—nothing—Dolly—Dolly—Varden—Varden—Varden—Dolly—Dolly—Doll—Do—Done for.

Noah's Sacrifice.

When was the greatest freshet in the world?

Who were saved?

How were they saved?

Why were they saved?

What was the boat called?

How long did the people stay in it?

Who told them when it was time to land?

Where did they land?

What did they do on landing?

Is there any danger of another such rain?

DOMESTIC ECONOMY.

Hints about House Cleaning.

In a general house cleaning, carpets that do not require to be taken up should be loosened at the edges, and the dust removed therefrom, and a good lookout made for moths. If there are any traces of moths wash the floor with benzine or sp. of turpentine, and put the carpet down quickly, and the insects will get their quietus.

Straw matting should be washed with a cloth dampened in salt water. Take care to wet it but little, for if the matting is soaked through it is liable to become brittle and soon give out. If Indian meal is sprinkled over it, or damp sand, and then thoroughly swept off, it will operate with good effect.

In washing windows, a narrow-bladed wooden knife, sharply pointed, is the best thing with which to take out the dust that harbors in the corners of the sash. Dry whitening will polish the glass nicely, and a weak black tea, with some alcohol is the best liquid with which to wash the glass. For a few days before the cleansing takes place, save all the tea grounds; then when needed, boil them in a tin pail with two quarts of water, and use the liquid on the windows. It takes off all the dust and fly specks. If applied with a newspaper, and rubbed off with another paper, they look far better than if cloth is used.

If there are old feather beds in the house, and no machine renovator at hand, put them out in the first heavy, drenching rain that falls. Let them become thoroughly wet and then turn the bed several times; then dry them in the sun, and when one side is perfectly dry, beat it with sticks to lighten up the feathers, and turn up the other side to dry; either placing boards under it or putting the beds on the piazza roof, if one is at hand.

To take out stains from either mattresses or feather beds, make a paste of soft soap and starch, and spread over the spots: when dry, scrape off with a knife, washing it with a damp sponge, as it falls off; if not clean, put on another paste. This application, if repeated frequently, until all discolorations are gone, will purify any bedding. Cockroaches can be kept away with powdered borax. Keep it in a tin pepper box and sprinkle it wherever they go. Paris green is recommended, but it is a poison; while borax is harmless. Sprigs of wintergreen, or ground ivy, will drive away small red ants, and branches of wormwood will make black ants "vamose the ranch."

Scald your bedsteads in the hottest soap-suds you can apply; if there are traces of bugs apply kerosene with a small paint brush. It is a sure cure. Tenants of city houses are often annoyed by bugs, and can not tell whence they came. Perhaps the border of the wall-paper might divulge their source, or the cornices of the windows disclose their haunts. Again apply kerosene and they will no longer trouble you. Carbolic acid may be applied. If pure, the odor is not as disagreeable as that of coal oil.

Papering and painting are best done in cold weather, especially the latter, for the wood absorbs the oil or paint much more than in warm weather, while in cold weather it hardens on the outside, making a coat, which will protect the wood instead of soaking into it.

In papering walls, be sure to remove all the old paper and paste, and scrape them perfectly smooth. The best paste is made of rye flour, with two ounces of glue dissolved in each quart of paste; half an ounce of powdered borax will make the paste better. People now generally understand how dangerous it is to paper a wall over old paper and paste. Many deaths have arisen from this cause; the air of many sleeping-rooms has been thus poisoned.

In whitewashing, a pound of glue dissolved in hot water and diluted with four gallons of cold water, to which is added six pounds of whiting, will be found to answer a better purpose than common lime. Wood-work can be washed with this glue size, and one coat of paint on it would last for years. A little chrome yellow will give a light lemon-colored tint to the wash.

A cheap paint for the floor can be made, which a strong, smart woman could apply to any floor: five pounds of French ochre; one-fourth of a pound of glue, and a gallon of hot water. Dissolve the glue in a small quantity of hot water; when wholly melted add the rest of it, stirring it slowly until well mixed. Then stir in the ochre, and apply while hot, with a good-sized paint-brush. When well dried apply one or two coats of boiled linseed oil. This paint dries very quickly, hardening in fifteen to twenty-four hours. It is very cheap. An oaken hue can be given to new pine floors and tables, by washing them in a solution of copperas dissolved in strong lye, a pound of the former to a gallon of the latter. When dry this should be oiled, and it will look well for a year or two; then renew the oiling.

Grease can be extracted from floors by applying a paste of wood ashes and quicklime, to be kept on several days and then washed off. Stains on wall paper can be cut out with a sharp pen knife, and a piece of paper so nicely inserted that no one can see the patch.

Ink stains on wood can be removed by a solution of oxalic acid. Cover the spots with bits of the acid, turn on a spoonful of water and place a heated flat-iron over it; when the hissing ceases the ink will have disappeared.

Kerosene and powdered lime whiting, or wood ashes, will scour tin with the least labor. Kero-

sene and whiting will also clean silver-ware, door-knobs, hinges, etc. Wet the flannel slightly in oil, dip in the whiting, and rub hard; wash off with a chamois skin or newspaper. Spots can be taken out of marble with finely powdered pumice-stone. Mix it with verjuice, cover the spots with it, and let it remain for twelve hours; then rub clean with a damp sponge; rinse with clean water and wipe dry with a cloth. Soapstone hearths should be first washed in pure water and then rubbed with powdered marble or soapstone, put on with a piece of the same stone. Gray marble hearths can be rubbed with linseed oil and no spot will show. If gilt frames are varnished with copal varnish, they can be washed with cold water without injury. Lace curtains should never be ironed. Wash and starch them, using in the rinsing water a tablespoonful of powdered borax. This makes them very stiff. When wet spread on a sheet, either on the floor or bed, and pin down every two or three inches. Let them dry for several days and they will look very nice.—Country Gentleman.

What Food is Most Wholesome?

Dio Lewis is probably the best doctor in the country for advising people how not to get sick and need other doctors. This is his conclusion as to food:

For Breakfast.—Oatmeal porridge with milk and sugar.

Or, Graham mush, with a little good syrup.

Or, cracked wheat with milk and sugar.

Or, baked potatoes with bread and butter.

Or, beefsteak or mutton chop, with baked potatoes and bread and butter.

If you are thin and need fat, use the first three; if you are too fat use the last named two.

Drink cold water or a little weak coffee.

Dinner.—Beef or mutton, roasted or stewed, with any vegetables you may like (though tomatoes should be used sparingly) good bread and butter, and close the meal with a glass of weak lemonade. Eat no desert unless it be a little fruit, and eat nothing more until the next morning.

There is no rule in regard to diet about which I am so fixed in my convictions, as that nothing should be eaten after dinner, and I think that the dinner should be taken early in the day, not later, if it can be so managed, than 2 o'clock. In regard to the precise hour of the dinner I am not so clear, though for myself 1 o'clock is the best hour; but in reference to the omission of the third meal, I have, after long observation, no doubt whatever.

Hundreds of persons have come to me with indigestion, in some of its many forms, and have experienced such relief in a single week from omitting the supper that I have, for a number of years, depended upon this point in the diet as the best item in my prescriptions for indigestions. I have never met one person suffering from indigestion, who was not greatly relieved at once, by omitting the third meal.

Eat nothing between meals, not even an apple or peach. If you eat fruit let it be with the breakfast and dinner.

Cooked fruit is best for persons with weak digestion. I have met hundreds of people who would digest a large beefsteak without a pang, but could not manage a single uncooked apple.

I think certain dietetic reformers have somewhat overrated the value of fruit.

Avoid cake, pie, all sweetmeats, nuts, raisins and candies.

Manage your stomach as above, and at the end of ten years you will look back upon these table habits as the source of a great advantage and happiness.

For thirty years I have been a constant and careful observer, (I have no hobbies about diet) and in the light of my own experience and these long observations, I assure you the table habits I advise are vital to health and happiness.

PREMIUM BREAD.—At a National Health Reform Association held not long since in New York, a premium of \$100 was awarded to Mrs. R. T. Thrall. The bread was made as follows:—Mix unbolted wheat meal (freshly ground) with pure cold water, to make a stiff dough; knead the dough thoroughly, working in as much as possible; cut into small pieces and bake in a quick oven. It will bake quicker and keep longer if made into rolls a little larger than the finger; or into cakes one-half or three-fourths of an inch in thickness, two inches wide, and three inches long. This bread may be dried as hard as a brick and kept sweet and good for weeks. You have only to dip it in water a minute, and let it stand five minutes to have as tender, wholesome and delicious bread as need be eaten.

WOMAN'S DRUDGERY.—The general introduction of a more simple and wholesome plan of cooking would greatly relieve woman of her present hard toil and drudgery, while it would promote the health of every member of her household. At least four-fifths of all the money expended for medicines and medical advice, are paid because of the diseases of women and children. And, nine-tenths of all the care, nursing, night-watching, and privation of sleep and rest because of sick children, are performed and suffered by women. The Medical Society in New York, which, on one of its festive occasions toasted women in the following words, had truth if not poetry as the basis of the sentiment.

"Woman,—God's best gift to man, and the chief support of the doctors."

Portable Kitchen.

A very useful device is extensively used in some parts of northern Europe, by workmen and others who have occasion to carry their meals with them to their places of work. This device consists of two parts, one a pot of tin, intended to receive the principal portion of the food, and a box, lined inside with non-conducting material, in which the pot is placed, so as to be protected against loss of heat.

It is used as follows: The food to be cooked is placed in No. 1,—meat, vegetables, water, salt etc.; some portions may also be placed in a smaller pot, which may be placed inside of the larger one. The two pots should then be placed on the fire till the water boils, the boiling being kept up for 20 to 30 minutes in accordance with the character of the food. The pot is then taken from the fire, closed with a cover, and at once introduced into the box. The cover of which is then closed and the box set aside, or taken with laborer to his work. After six hours the cooking is finished, and the food in proper condition to be eaten; but there is no objection to leaving it longer, as it cooks exceedingly slow, and retains all its flavor. Numerous experiments have demonstrated that after twelve and even 18 hours beef and soup were sufficiently warm, and had lost nothing in regard to their quality.

All kinds of food which do not require roasting or frying may be prepared in this apparatus; dry vegetables, potatoes, rice and milk, mutton, or veal pie, beef *a la mode*, leg of mutton, chicken stew, etc., may be prepared with economy of fire and of time. As there is no evaporation, the food thus prepared is of better flavor than that cooked in the customary way.

The advantages of this portable apparatus are: 1st. Economy of fuel, saving from 50 to 70 per cent. 2d. Economy of time and trouble, as after the food is placed in the box it needs no more looking after, as the whole operation completes itself by the heat retained. The laborer's wife may in the morning at six, while she prepares breakfast, cook the dinner, and after 30 minutes' cooking put it all in the box. The husband carries the box with him to his shop, or any other place, and is sure of a warm well-cooked dinner at 12. 3d. The dinner can never be burned or taste of smoke, dangers which housewives and cooks have to look out for, and which occasionally befall the best-regulated households. 4th. The taste is better than that of meals prepared in open vessels, where the flavor is continually escaping with the steam. 5th. The convenience of transporting such an arrangement to the factories, shops, or on the railroad cars, or even to picnics. 6th. The certainty of a warm meal, which is much more healthier than the cold food, with which so many laboring people have to satisfy themselves.

Some hardware manufacturer should take hold of these ideas, and furnish such arrangements at such reasonable prices that all our workmen may procure them. We feel confident that with the progressive ideas of our population, their introduction would soon be appreciated, and secure at the same time a profit to the manufacturer and dealer, and a practical benefit to our workmen, whose health and comfort we are all in duty bound to promote as much as is in our power.

Extract of Coffee.

This may be made in two ways. The first way gives less, but a very highly and very pleasant aromatic extract; the second gives more and of greater strength, but of less pleasant flavor. The difference is found on the fact that cold water dissolves the more agreeable ingredients, while boiling water takes all the bitter principles of less agreeable flavor.

The first extract is made by placing the coffee in a deep narrow filter, and passing cold or tepid water through. For greater economy the coffee may be divided into a series of filters, and treated in succession with the same liquid. To understand this, call them *a, b, c, d, e*; the liquid from *a* goes to *b*, then in *c*, etc.; *a* receiving always the clean water, is first exhausted and rejected, when *b* becomes No. 1, and a fresh filter, *f*, is added, to receive the liquid from the others; after a while *b* is rejected, and *c* becomes No. 1, while we add again a last freshly-filled filter, *g*, and so we go on. The liquid obtained is condensed by evaporation, and may be sweetened with sugar, but if sufficiently condensed to the thickness of syrup, it will keep without sugar, and is a most desirable thing when traveling. It may be mixed with the sugared condensed milk, prepared in tin cans, and then will keep any length of time, and always be ready to make a most delicious cup of hot or cold coffee, with hot or cold water.

The second method is to boil one pound of good coffee with a half a gallon of water, till reduced to a pint; let it cool, and filter, and then boil again, and add enough sugar to make a thick syrup; cool it, pour in a bottle, and cork up. Two teaspoonfuls of either of these extracts will, with a cup of boiling water, make a good cup of coffee.

It is evident that with the second method we have much fine flavor carried off by evaporation during the boiling, and have this compensated for by ingredients dissolved by heat. In order to become satisfied about the inferiority of the second method, take the grounds left from the cold filtering process, and boil them to make a coffee extract according to the second method, and a syrup is obtained, which is not only inferior, but when mixed with water, makes an absolutely disagreeable beverage.

California Sugars.

California will this year place upon the market a large quantity of first quality sugars, almost exclusively from beets. The Alvarado crop promises to be a large one, and many hundred acres will doubtless yield the full maximum quantity of first quality of beets. The Sacramento company with over a thousand acres of beets, 600 of which are in prime condition, with a promise of an enormous yield, and several hundred acres on which the crop is middling, will together turn out its thousands of barrels of refined sugars; with what prospect of remunerative returns or of high rates for their products, may be judged from the following which we find in the *N. Y. Grocer*:

Sugar Prospects.

The prospects of the coming season are that the present prices of sugar will be maintained. These prices are somewhat in advance of what was expected, but sugars are not high as compared with other articles of necessity. Persons who have recently arrived from Cuba represent that the eastern part of the island is virtually in the hands of the insurgents, and that no sugar need be expected from Neuvas for a year or two, the plantations in that neighborhood being generally destroyed. This being one of the largest shipping ports, its being closed to commerce is seriously felt. The planters in a large portion of the island are compelled to guard their plantations with troops, and this is very expensive, it adding to the cost of production. The short crops of beet sugars this year, however, has much to do with the present prices, and already large orders are in the Cuban markets for European accounts; and this will materially diminish the supply in the United States. Within the last year the consumption of sugar in the United States has increased sixteen per cent., and this in the face of a diminished supply. In Europe the consumption has likewise increased, and as their crops have been short the advance in rates is not to be wondered at. It is a noteworthy and significant fact that one of the wealthiest refineries in the city has contracted with one importing house for 15,000 hogsheads centrifugal sugars, at prices that show their foresight and enterprise, and indicate the feeling pervading all classes of sugar dealers that the price of centrifugal sugars must rule high until some more certain and prolific source of supply is found.

Tulare County Agricultural Society.

The farmers of Tulare County are moving in the matter of an agricultural society. A correspondent from that section says: "Our valley has been so long exiled, as it were, from the rest of the world, that it has not been properly appreciated; but as we now have the 'Iron Horse' already within our county, we desire to let the rest of the State know, that Tulare still has an existence and that her people are waking up to the importance of her agricultural interests."

The suggestions contained in the letter of our correspondent have been complied with; and now in turn, we would suggest, that as soon as the great labor of the harvest is over, the farmers of Tulare lose no time in the organization of a Club, for the weekly discussion of the more important agricultural interests, pertaining to their county, including stock-growing, fruit, grain, and vineyards, and then send to the *Rural* the reports of their discussions, that people over the whole world may hear from, and of, Tulare county and her vast resources.

POPULAR SCIENCE MONTHLY.—This publication fills a most urgent want in the magazine literature of the day, and promises to become immensely popular. Scientific matters are here treated in a familiar and popular manner by some of the most eminent scientists of the day. The magazine is issued in Appleton's best style, and bids fair to become immensely popular. The second number, which has just come to hand, amply fulfils the high promise of the first. It contains a large number of interesting articles, among which we notice one from Herbert Spencer on Social Science, continued from No. 1. Prof. Yeomans gives an interesting article on What is Known About Sun Spots. The Natural History of Man is continued from No. 1. One of the finest articles is by an anonymous writer on Darwinism and Divinity. Every article in the two numbers which have already appeared, are both timely and well written, and constitute the cream of the scientific literature of the day.

CROPS IN SAN JOAQUIN—WHEAT NEARLY RIPE.—J. A. McCloud brought to this office yesterday a sample of his wheat crop on the south bank of the Tuolumne river, about three miles and a half from Modesto. Mr. McCloud and R. Whitmore own jointly 2,300 acres, and they expect to harvest no less than fifty thousand bushels. They will commence harvesting in the course of about ten days. The sample brought here yesterday is nearly ripe, finely headed, and the grain plump and full. The stalks are over fifty-four inches in height, and the whole is ripening equally. Mr. McCloud tells us that he has never seen any wheat field to surpass this in appearance. The advantages of the late favorable weather to the wheat crop generally are almost beyond calculation. As harvest approaches the prospects brighten, and the farmers everywhere are full of spirit.

Republican, June 8: George W. Sperry brought to this office last evening samples of wheat, the product of his land on the west side of the San Joaquin river, about four miles south from San Joaquin City. In that locality he has five hundred and sixty acres in wheat and one hundred and sixty acres in barley. Mr. Sperry and brother, who own the land jointly, commenced sowing in the middle of February and completed the work on the 15th of March. The sample of the last sown, which he brought to this office, is a little over thirty inches in height and finely headed.—Independent.

CITY MARKET REPORT.

DOMESTIC PRODUCE AT WHOLESALE.

[The prices given below are those for entire consignments from first hands, unless otherwise specified.]

SAN FRANCISCO, Thurs., A. M., June 13.

FLOUR—We note a fair local demand with a moderate inquiry for export. Sales reported embrace 8,000 bbls. Cal. extra, 2,000 do. Cal. superfine, and 3,000 Oregon extra. We quote prices as follows:

Superfine, \$4.75@5.00; extra, in sacks, of 196 lbs. \$6.37½@6.62½; Oregon brands, \$5.50@6.37½ in sacks of 196 lbs.

WHEAT—The market has been dull at declining rates since our last review. Sales aggregate 15,000 sacks fair to choice at \$1.80@2.10 per 100 lbs. Quotable at close at \$1.75@2.00 per 100 lbs.

The latest Liverpool market quotations come through at 12s. 9d. @ 13s. per cental.

BARLEY—Market fair. Sales embrace 800 sacks ordinary coast to choice bay, at \$1.35@1.60. The range at close is new feed \$1.25@1.30; old feed \$1.40@1.50; old brewing \$1.55@1.60.

OATS—Market has been steady during the week under review. Sales 5,000 sacks ordinary coast to choice bay, at \$1.65@1.80 per 100 lbs. which is the extreme at close.

CORN—Is quotable at \$1.45@1.50 per 100 lbs. **CORNMEAL**—Is quotable at \$2.00@2.75 per 100 lbs. from the mill.

BUCKWHEAT—Is quiet at \$2.25 per 100 lbs. **RYE**—Is quiet at \$2.00@2.15 per 100 lbs.

STRAW—Quotable at \$3.00@3.50 per ton by the cargo.

BRAN—Is selling at \$17@17½ per ton from the mill.

MIDDINGS—For feed, are \$22.50@25 per ton from mills.

OIL CAKE MEAL—Is selling at \$30 per ton from the mill.

HAY—The supply of new is quite heavy and prices are falling. The new brings \$16, while the old sells at \$16@22. Sales of fair new wild oat at \$10@11½.

HONEY—New is selling at 12½ in the comb, and 10@15c strained; old in comb 8@15; do strained 8@12½ per lb.

POTATOES—The demand is fair. Sales of new at \$15@1.75 per 100 lbs.

HOPS—California are nominal at 70c.

HIDES—During past week 1,825 Cal. dry sold at 18½@19½, and 350 salted at 8½@9½c.

WOOL—The market is still very quiet and prices are nominal. There is no improvement in the market, and agents from the East who are here, have received orders from headquarters to stop buying. Sales aggregate about 100,000 lbs at nominal rates. Best wools held at 40@45c., with 35@40 bid. The quotations for fair to good clean grades may be set at 32½@40.

TALLOW—Market weak at 8@8½c. per lb. **SEEDS**—Flax 3c.; Canary, 5@6c.; Alfalfa, PROVISIONS—California Bacon 13@14½c.; Oregon, 13½@14c.; Eastern do. 11½@12½c. for clear and 11@12 for sugar-cured Breakfast; Cal. Hams 14½@15; Eastern do. 14½@15½c.; California Smoked Beef, 13½@14c. per lb. 16@20c.; Mustard, 3@6c. for the different kinds.

BEANS—Market not quite so firm. The following are jobbing rates: Pea \$3.75@4.00; small White \$3.75@4.1; Small Butter \$2.25@2.50; large \$3.00@3.50; Bayo, 4.00@4.25; Pink and Red are scarce.

ONIONS—New crop of red selling at \$1.25 per 100 lbs.

NUTS—California Almonds, 8@10c. for hard and 18@25 for soft shell; Peanuts, 5@8c.; Pecan, 25c. per lb.; Hickory, 12c.; Brazil, 15c.; Chili Walnuts, 15c.; Italian Chestnuts 25c.; Eastern Chestnuts, 15@20c.; French Almonds, 25@30c.; Princess Almonds, 35@40c.; Los Angeles Walnuts, 18c.; Cocoa-nuts, \$10.00 per 100.

FRESH MEAT—We quote slaughterer's rates as follows:—

BEEF—American, 1st quality, 7@8 per lb. do. 2d quality 6@7 per lb.; do. 3d do. 3½@5c.

VEAL—Quotable at 7@11c.

MUTTON—6@6½c. per lb.

LAMB—Easier at 8@9c.

PORK—Undressed grain-fed is quotable at 5½@6½c. dressed, grain-fed, 8½@9c. per lb.

POULTRY—Live Turkeys, 24@27c. per lb.; dressed, 28 per lb.; large Hens \$10.00@11.00; Roosters, \$10.00@11.00 per dozen; Spring Chickens, \$4.00@7.00; Ducks, tame, \$8.00@10.00 per doz.; Geese, \$12@15 per dozen.

DAIRY PRODUCTS—Fresh California Butter, common to good in rolls, may still be quoted at 22½@27½c., with a few choice lots at 30; New firkin is quotable at 25@27½c.

CHEESE—New California, 12@15c.; Eastern is jobbing at 21@22c. per lb.

Eggs—California fresh, are 28@29c. per doz.; Eastern 20@22½. Oregon, 25@26.

LARD—California 12½@13½; Oregon, none in market. Eastern in cases 14@14½c.; do in tes. 11½@12c. per lb.

FRUIT.

Tah. Oranges, M. 23 30@27½; Currants, 3½@6; California do. 20 00@50 00; Apples, 1 50@2 00; Limes, 15 00@20 00; Pineapples, 5 00@8 00; Aust. Lemons, M. 5 00@10 00; Strawberries, 4 50@5 00; Cal. do. M. 35 00@50 00; Gooseberries, 4 50@5 00; Sicily, do. 14 00@15 00; Cherries, 15 00@25 00; Bananas, bunch 2 50@3 50; Apricots, 15 00@18 00.

DRIED FRUIT.

Apples, 8½@9c. per lb.; Pitted, do. 20@22½; Raisins, 5@10; Black Figs, 6@8; White, do. 15@20; Apricots, 5@10.

VEGETABLES.

Cabbage, 1@1½; Cucumbers, 20@25; Garlic, 2@3; Summer Squash, 1½@2; Rhubarb, 1@2; Asparagus, 5@6; Green Peas, 2½@3; Tomatoes, 2@4; Sweet Peas, 2@4; Spring Beans, 2@4.

GENERAL MERCHANDISE.

AGRICULTURAL IMPLEMENTS—Dealers report an active inquiry for seasonable articles under this head. Stocks are in good supply and prices unchanged.

BAGS AND BAGGING—The market has been firmer since the adoption of the new Tariff Bill, which raises the duty on Burlap bags to 40 per cent., and reduces it to 30 per cent. for Burlap goods. This will come into effect on August 1st. Burlap sacks 17½@18c.; Flour sacks 9½@10½c. for qrs. and 15@15½c. for hfs. Standard Gunnies are jobbing at 20@21c.; Wool 75@80c.; Hessians 40 inch goods 14@14½c. per yard.

BOOTS AND SHOES—Demand continues active for goods under this head and assortments are complete. A trade sale of 1,000 cases Eastern and California make was held at H. M. Newhall's auction rooms, on the 10th and 11th inst. Fair prices were received; it will probably be the last general sale until September.

BUILDING AND FENCING MATERIALS—The demand for lumber is about equal to receipts, and stocks are light. Dealers pay for cargoes of Oregon as follows: Rough \$17; do surfaced at \$28; Spruce \$17@18; Redwood rough \$16; refuse do. \$12; dressed do. \$30; refuse do. \$20. Rustic \$32½; refuse do. \$21½. Wholesale rates for various descriptions are as follows: Laths at \$2.50@2.75; Shingles \$2.50@2.75. Sugar Pine \$35@45; Cedar \$27½@37½. Pickets: Rough, \$14; pointed, \$16; dressed, \$25. The following list of retail prices has been adopted by the Lumber Dealers' Exchange.

Puget Sound Pine—

Rough, 1st M. 22 50

Fencing and Stepping, 1st M. 35 00

Fencing, second quality, 1st M. 25 00

Laths, 1st M. 3 00

Fencing, 1st lineal foot. 2 50

Redwood—

Rough, 1st M. 22 50

Rough, 2nd M. 17 00

Rough Pickets, 1st M. 13 00

Rough Pickets, pointed, 1st M. 20 00

Fancy Pickets, 1st M. 30 00

Siding, 1st M. 25 00

Tongued and Grooved, surfaced, 1st M. 37 50

Do do refuse 1st M. 25 00

Half-inch surfaced, 1st M. 35 00

Rustic 1st M. 40 00

Batten 1st lineal foot. 3 00

Shingles 1st M. 2 50

Sugar Pine is jobbing at \$35 for clear and \$45 for second quality.

COFFEE—Costa Rica 20½c.; Guatemala 18c.

Java 26c.; Mailla, 19½c.; Rio 19½c. @ 20;

Ground Coffee in cases 30c.; Chicory, 12½c.

SPICES—Allspice 14@15c. Cloves 16@17c. Cassia 35@36c. Nutmegs 1.00@1.10. Whole Pepper 20c. Ground Spices—Allspice 1.00 per doz.; Cassia 1.50; Cloves 1.12½; Mustard 1.50; Ginger and Pepper, each \$1.00@1.12 per doz.; Mace 1.50 per lb.; Ginger 15c. per lb.

FISH—We quote Pacific Dry Cod in bundles at 4½c. @ 5½c. Salmon in bbls. \$6.00@7.00, hf do. \$3.50@4.50; Case Salmon, \$2@3 per doz for 1@2-lb cans respectively; Pickled Cod, \$4.50 in hf bbls and \$8 in bbls; Puget Sound Smoked Herring, 60@85c. per box; Mackerel, No. 1 hf bbls, \$9.00@10.00; extra, 10@10.50; in kits No. 1 \$2.25@2.50; do No. 2, \$1.75@2.00. Smoked Salmon, 7@7½c. per lb.

NAILS—Quotable at \$6 25@9.00 for assorted sizes.

PAPER—California Straw Wrapping, sells at \$1.50@1.60, Eastern \$1.60@1.80 per ream.

PAINTS—White Lead 8@12½c.; Whitening, 2½c.; Chalk 2c.; Paris White 3c.; Ochre and Venetian Red each 3½c.; Red lead and Litharge each 10½@11c. per lb.

RICE—Sales of China No. 1 at 7@7½c. and No. 2 at 6½@6¾c. per lb; Siam, quotable at 5½@6½c. in mats; Carolina Table, 10@11; Hawaiian, 9½@10c. per lb.

SUGAR—We quote Cal. Cube at 12½c.; Circle A Crushed, 12½c., and Granulated 12c.; Golden C. 10½@11c.; Hawaiian 8@10½c. as extremes per lb.

SYRUP—Prices may be given as follows: 57½c. in bbls, 60 in hf bbls, and 65c. in kegs.

SAIT—California Bay sells at \$5@14; Carmen Island, in bulk, \$14@15; Fine Liver-pool, \$23.50 per ton; coarse, \$18@19.

SOAP—The prices for local brands are 5@10c., and Castile, 12@13½c. per lb.

TEA—We quote Young Hyson at 70c. @ \$1.15; Gunpowder, 85@1.15; Imperial, 85c. @ \$1.25; Oolong in bulk 40c. @ \$1.00, in ½ lb. papers 37½c. @ \$1.10; English Breakfast Souchong 45c. @ \$1.00; English Breakfast Congou, 50@55c.; Basket 50@55c. per lb.

San Francisco Retail Market Rates.

THURSDAY NOON, June 13, 1872

MISCELLANEOUS.

Butter, Cal. fr. 25 40

do Oregon, 25 40

Honey, 1 lb. 25 40

Cheese, 20 25

Eggs, per doz. 40 45

Lard, 1 lb. 18 20

Sauces, 7 lb. 1 00

Brown, do. 9 13

Beet, do. 12 00

Sugar, Map. 12 00

Pears, dried, 15 30

Peaches, dried, 15 30

Wool Sacks, new 82½ 85

Second-hand do. 82½ 85

Wheat-sks, 22½ 18

Flour, ex. 100 lbs. 6 25

Superfine, do. 6 00

Corn Meal, 100 lbs. 3 00

Wheat, 100 lbs. 2 40

Oats, 100 lbs. 1 60

Barley, cwt. 1 50

Beans, cwt. 1 00

Dry Lima Beans 1 00

Hay, 1 ton 17 00

Potatoes, cwt. 7 50

Apples, 25 40

Pine Apples, 25 40

Bananas, 50 00

Cal. Walnuts, 10 00

Cranberries, 10 00

Strawberries, 10 00

Raspberries, 10 00

Cranberries, 10 00

Gooseberries, 10 00

Cherries, 10 00

Oranges, 1000, 20 00

Lemons, 1000, 10 00

Limes, per 100, 2 00

Figs, dried, 60 00

Asparagus, wh. 12 00

Artichokes, doz. 50 00

Russell's sprits, 10 12

Beels, 10 25

Potatoes, New 2 00

Potatoes, sweet, 5 00

Broccoli, 10 doz. 1 50

Cauliflowers, 1 doz. 50 00

Cabbage, 10 doz. 1 00

Carrots, 10 doz. 15 25

Celery, 10 doz. 75 00

POULTRY, GAME, FISH, MEATS, ETC.

Chickens, apiece 87½ 00

Turkeys, 1 lb. 30 00

Ducks, wild, 1 lb. 25 00

Tame, do. 25 00

Geese, wild, pair 60 00

Tame, 1 pair, 2 50

Hens, each, 75 00

Suip, 10 doz. 2 50

Quails, 10 doz. 2 50

Pigeons, don. 60 00

Wild, do. 2 00

Hares, each, 40 00

Rabbits, tame, 10 00

Wild, do. 12 50

Beef, 1 lb. 18 00

Corned, 1 lb. 10 00

Smoked, 1 lb. 15 00

Fork, rib, etc. 15 00

Chops, do. 15 00

Veal, 1 lb. 15 00

Cutlet, do. 20 00

Mutton chops, 12 15

Leg, 1 lb. 15 00

Lamb, 1 lb. 15 00

Tongues, beef, ea 75 00

Tongues, pig, ea 15 00

Bacon, Cal., 1 lb. 18 00

Oregon, do. 16 00

Hams, Cal., 1 lb. 16 00

Hams, Cross, 1 lb. 25 00

Sardines, 8 00

Per lb. + Per dozen. 1 Per gallon.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post St.]

SAN FRANCISCO, Thursday, June 13, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as follows:

City Tanned Leather, 1 lb. 26 25

Santa Cruz Leather, 1 lb. 26 25

Country Leather, 1 lb. 26 25

Stockton Leather, 1 lb. 26 25

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 1 lb. 10 Kil. per doz. 72 00@90 00

Jodot, second choice, 11 to 15 Kil. per doz. 60 00@70 00

Lemoine, 16 to 18 Kil. per doz. 75 00@77 50

Levin, 12 and 13 Kil. per doz. 68 00@70 00

Correll, 12 to 14 Kil. per doz. 70 00@72 00

Oregon

MONITOR, ALPINE COUNTY, Cal.,
May 27, 1872.

Messrs. DEWEY & Co., San Francisco—Gentlemen:—
Your favor of 24th inst. is at hand with Patent for Ore
Washer and Amalgamator. Please accept my best
thanks for the very prompt and business-like manner
in which you have conducted this matter.
Yours truly,
W. T. PICKARD.

Important to Wool Growers.



PURE BLOODED
FRENCH MERINO RAMS
FOR SALE BY ROBERT BLACOW,
Of Centerville, Alameda County, Cal.

These Rams are guaranteed to be pure blooded French
Merino, and I would respectfully call attention to them
from those who desire to see or purchase the best and
purest of stock. 16v3-5m

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

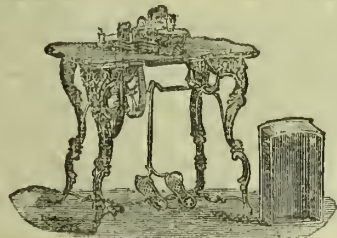
As a Family or Light Manufacturing Machine it has
no superior—uses a straight needle and shuttle, and
makes the Lock Stitch (all on both sides). Send for
a circular. Agents wanted in every town.

E. W. HAINES, General Agent,

17 New Montgomery street, Grand Hotel Building,
SAN FRANCISCO.
15v3-3m

THE

FLORENCE



Will sew everything needed in a family, from
the heaviest to the lightest fabric.

IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,
Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of
San Francisco not working well and
giving entire satisfaction, if I am in-
formed of it, it will be attended to
without expense of any kind to the
owner.

SAMUEL HILL, Agent,
19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of
the work. Active Agents wanted in
every place.

MILLIONS OF PAIRS SOLD.

CABLE SCREW WIRE

BOOTS AND SHOES.

WOOL! WOOL! WOOL!

Highest prices paid for Wool.

Wool Graded, Packed and Shipped for Eastern buyers
on reasonable terms.

ROBT. BECK,
Secretary State Agricultural Society,
Sacramento.
10v3-4f

WATT & McLENNAN,
WOOL COMMISSION MERCHANTS,
625 Sansome street, corner Jackson, SAN FRANCISCO.

Receive Consignments of Wool, Sheep
Skins, Hides, etc. Liberal advances made to
consignors. Keep on hand the best quality of
Wool Sacks, Twines, and other supplies.
10v3-3m

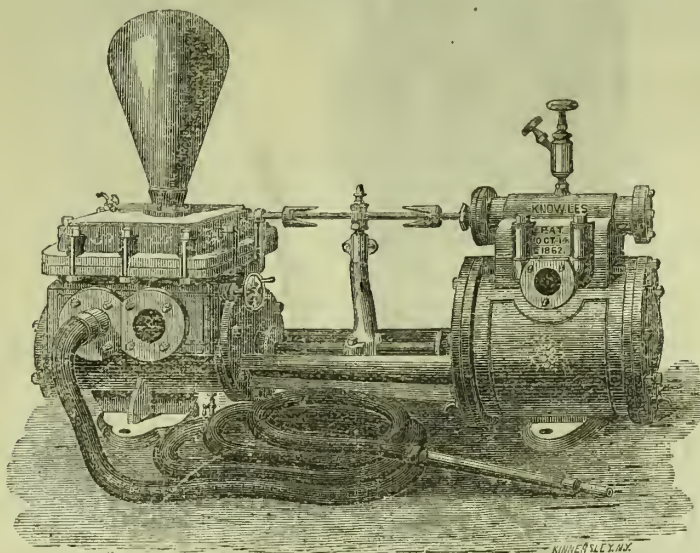
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San
Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The work-
manship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal.
(Diploma awarded). Signed by the Committee:

v113-awbp

G. W. DICKIE, CHAS. R. STEIGER, W. EPPESHEIMER, H. B. ANGELL, MELVILLE ATWOOD."



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it
is always ready to start without using a starting-bar, and does not require hand-work to get it
past the center. Will always start when the steam cylinder is filled with cold water of con-
densation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee
of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump
to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in
economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand.

3v24-cow-bp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics'
Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as
compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well
arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL,
JAS. SPIERS, WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the
Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We
recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGELL, CHAS. R. STEIGER,
W. EPPESHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhi-
bition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump of any kind
whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for
which we are also selling agents—See official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco by a committee of five of the most
thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of
utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED
A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held
in San Francisco or California.

A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

TREADWELL & CO.,
Market Street, corner of Fremont, SAN FRANCISCO.

THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries,
we state that the highest award for Steam Pumps at the Eighth or last Mechanics'
Fair in San Francisco, was a First Premium and Diploma, awarded to the Knowles'
Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

From ALL SIZES
3 to 30
Horse
Power. PORTABLE
Engines
TREADWELL & CO.
Sole Agents

"THE HOADLEY" is the Perfection of the Portable
Engine. For sale, with or without wheels, at Ma-
chinery Depot of TREADWELL & CO., Market, head of
Front street, San Francisco. 11v24-cowbp

Frank Miller's Mowing Machine
OIL,

In Lots to Suit, at Agent's Rates.

JAMES W. COX,

21v3-1m 408 Battery street, San Francisco.

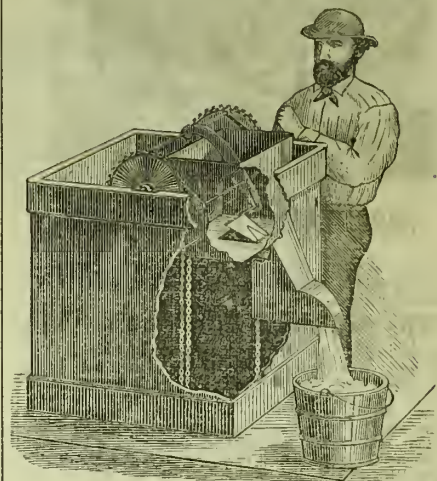
O. P. SHEPHERD, N. W. SPAULDING, J. PATTERSON.



Pacific Saw Manufacturing Co.,

17 and 19 Fremont Street, San Francisco.
REAPING AND MOWING MACHINE SECTIONS
made to order—Three Dollars per Dozen. SAWS of every
description on hand and made to order. All work war-
ranted. 11v3-4f

Endless Chain Elevator,
FOR RAISING WATER FROM WELLS.
BALL & CRARY, Patentees.



The inventor claims that his ELEVATOR excels any
other apparatus that has ever been brought before the
public for the purpose of raising water from wells. Its
chief merits are: First—The water is obtained from the
well in a purer and colder state, for the reason that it is
drawn from near the bottom. Second—It is operated with
the least difficulty, particularly in lifting a certain amount
of water from any depth in a given time, as compared with
any other mode. Third—It obviates all necessity for going
down into the well in putting in the machinery, or for re-
pairing the same, as such labor can be performed at the
surface. Fourth—It can be easily taken out of one well
and transferred to another. Fifth—It is less liable to get
out of repair—but when repairs are necessary they can be
easily made by any one; the action made by the Endless
Chain and buckets keeps the well properly ventilated;
there is no possibility for the person operating it [nor for a
child] to fall into the well.

For circulars and particulars address

JOHN A. BALL,

20v24-awbp1m Grass Valley, Nevada Co., Cal.

The California Powder Works

No. 314 CALIFORNIA STREET.

SAN FRANCISCO.

Manufacturers and have constantly on hand

SPORTING,

MINING,

And BLASTING

POWDER,

Of SUPERIOR QUALITY, FRESH FROM THE
MILLS. It being constantly received and transported
into the interior, is delivered to the consumer within a
few days of the time of its manufacture, and is in every
way superior to any other Powder in Market.

We have been awarded successively

Three Gold Medals

By the MECHANICS' INSTITUTE and the STATE AG-
RICULTURAL SOCIETY for the superiority of our
products over all others.

We also call attention to our

HERCULES POWDER,

Which combines all the force of other strong explosive
now in use, and the lifting force of the BEST ELASTIC
POWDER, thus making it vastly superior to any other
compound now in use.

A circular containing a full description of this Pow-
der can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

Genuine Haines

Headers, from 10 to 15 feet cut, made by Walter A. Wood
at Hoosick Falls, N. Y., with all his IMPROVEMENTS, and
having also DOANE'S PATENT, ADJUSTABLE REEL. No
other Headers have these IMPROVEMENTS: Take none
but the HAINES' IMPROVED HEADERS made by Wood,
especially for California.

RUSSELL'S THRESHER

AS IMPROVED is the perfection of the Threshing Machine.
We have them from 30 to 40 inch, with NEW FEED TABLE,
LARGE SHOE, DOUBLE FAN, ELEVATOR, DOUBLE DISCHARGE,
etc., made especially for the wants of California, after
years of study. It has greater cleaning capacity than
any other, and is EVERY WAY PERFECT. No other
machine has ever equalled "The Russell;" none can
excel it.

Treadwell & Co.

SAN FRANCISCO.
17v3-4f

THRESHING AND REAPING
Lubricating Oil.

We invite attention to this superior Lubricator, spe-
cially for all out door machinery exposed to the dust
and dry air of a California climate. Being of HEAVIER
GRAVITY than Sperin, a less quantity is needed. It
neither gums or becomes thick and sticky, like the ordi-
nary machine oil in common use, with a saving of from
15 to 25 per cent. In reduced friction, and at a cost 50
per cent. less than the best Lard Oil.

W. STRINGER & CO.,

20v4-3m 424 Davis street, SAN FRANCISCO.

Los Angeles County Lands.

Farming Lands in Los Angeles County for sale, in
sections and quarter sections, at reasonable prices and
on accommodating terms—say, one-fourth cash and
balance in one, two and three years, with interest at 10
per cent., payable annually. Apply at the office of the
company, No. 642, corner Market and Montgomery
streets, over the Hibernia Bank, San Francisco, or to the
agent, W. R. OLDEN, Anaheim. 12v3-3m

PURCHASERS please say advertised in Pacific Rural Press.



IMPORTANT TO FARMERS.

It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

KIRBY REAPING & MOWING MACHINES

Have established an office on the corner of Clay and Davis streets, San Francisco, for the sale of their Celebrated Machines. The KIRBY COMBINED is a machine that has been favorably known on this coast for the last ten years. Its performance as a REAPER or MOWER, as a HAND-RAKE or SELF-RAKE MACHINE, has never been excelled; and while it has kept up with all the late improvements, we present it this year with the new BALTIMORE SELF-RAKE, which has proved itself to be all that can be required in that line.



We would call especial attention to the TWO-WHEELED KIRBY MOWER, a late invention of three years successful TEST. It embraces several new features which no other two-wheeled Mower has ever yet attained, and which gives it several advantages which no other machine of its kind possesses, among which are:

- 1st—A JOINTED PITMAN, which allows the knife or cutter-bar to work on any angle without extra strain or friction.
- 2d—It can be run with a STIFF or LIMBER POLE, as desired.
- 3d—The points of the yards or fingers can be made to pick at any angle to suit the condition of grass or ground.
- 4th—The driver's seat is also a lever to command the heel of the Cutter-bar, and also to change the pick of the guards.
- 5th—A new device of the Pitman, expressly designed for California, by which it will take up its own wear, thus preventing shake or jar and the breaking of the knives.

There are other points of advantage we will omit to mention, but which can be readily seen by the Farmer on investigation.

We design to have local agencies at all the principal points of trade in the State, where the Farmer can investigate the merits of the Machines before purchasing elsewhere.

D. M. OSBORNE & CO.

Corner Clay and Davis streets, San Francisco.
By OMAR JEWELL, Manager. 18v3-3m

Hill's Patent Eureka Gang Plow.



The following are some of the reasons why these Plows, are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

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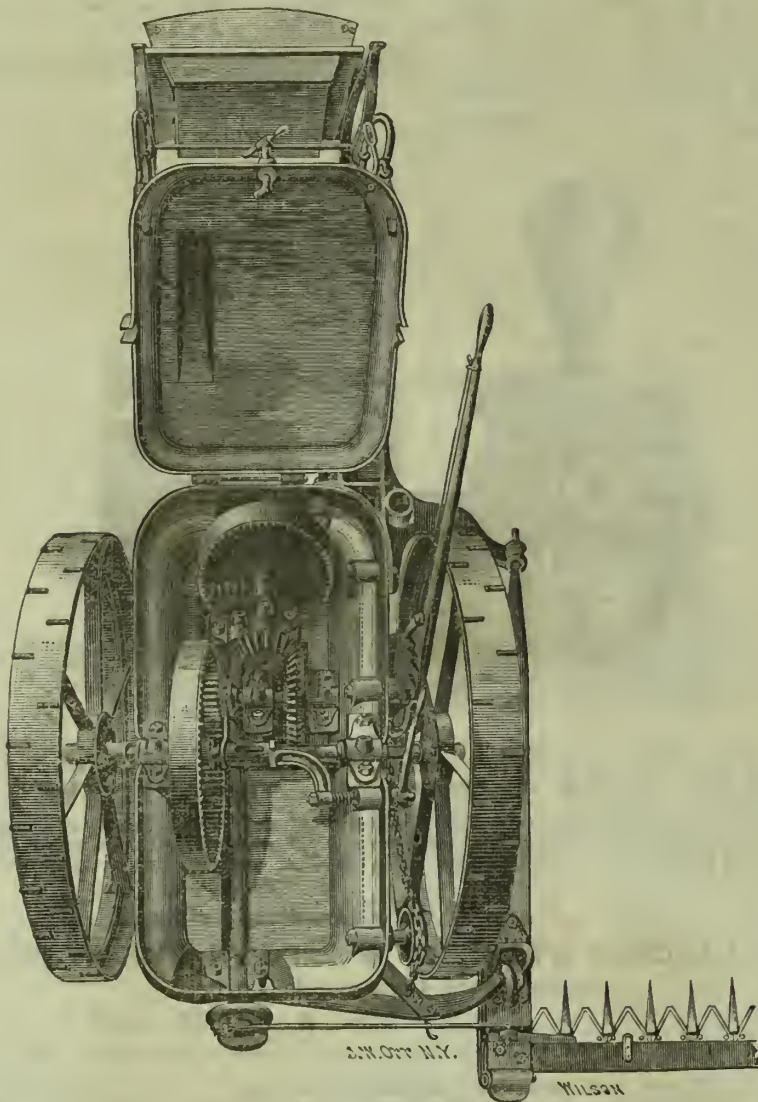
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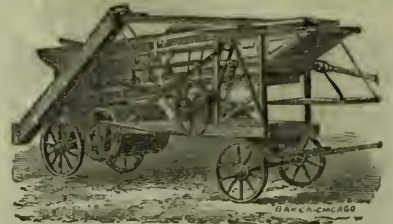
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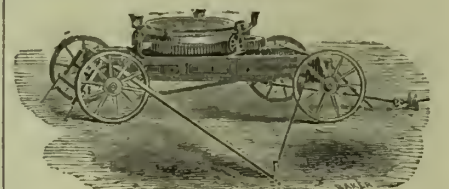
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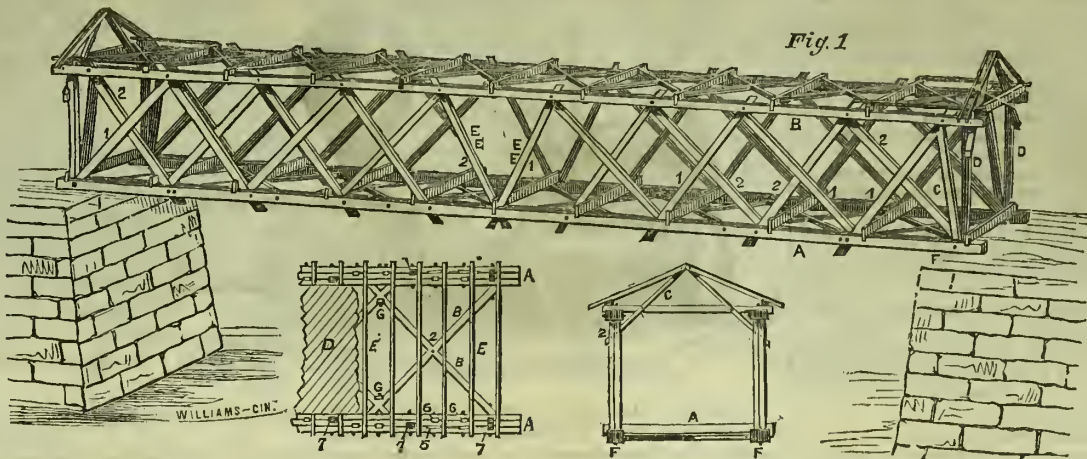
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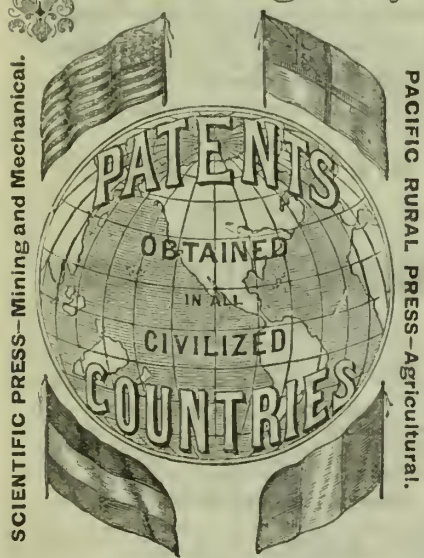
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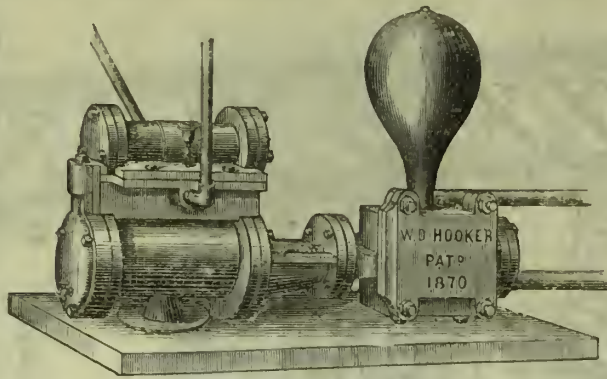
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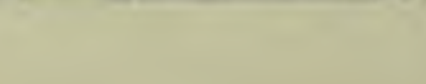
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6v3tf

ROBT BECK, secretary,

State Agricultural Society, Sacramento.



Volume III.]

SAN FRANCISCO, SATURDAY, JUNE 22, 1872.

[Number 25.]

The Wool Market.

The present condition of the wool trade may be put down about as follows: There is no advance in the price of wools East and no prospect of there being any. Manufacturers are still buying only sufficient to keep their mills running, anticipating a still further decline, while the new clip is continually coming forward; with the usual arrivals of foreign wools incident to the season and the inflated prices of the early spring.

The estimated quantity of wool for California, spring clip, is 14,000,000 pounds; of this amount 12,000,000 pounds have been received at San Francisco, and is now here and on the way East, shippers sending it forward on their own account in the absence of sales made here. About half a million pounds have been sent forward from other parts of the State without coming here, which leaves about 1,500,000 yet to come in.

It is now generally admitted that those who sold early, taking from 45 to 50 cents for their wools sold at a higher figure than holders will be likely to realize, for a year or more to come; the advance in wools taking place early in the season, has kept back millions of sheep from the mutton markets in anticipation of a further advance in the value of wool. Hence we see no apparent reason why there should be any scarcity, or why prices should advance.

The new tariff reducing the duty 10 per cent. on foreign wool, goes into operation on the first of August. Besides the reduction of 10 per cent., the discriminating duty of 10 per cent. on all wool not imported direct from places of growth has also been removed, to go into operation on the 1st of October next. The general reduction of 10 per cent., with the removal of the discriminating duty, will make a difference of 5 c. per lb., currency, on all Colonial wool imported from Great Britain, taking as a basis the present current prices in that market. This will, no doubt, have an important bearing on the price of wool, and may lead to large purchases of Colonial wool at the sales to come off in June and July.

Here is what the Michigan Farmer said about the wool market of 1872, in March last: "During the season of 1872 there will be a great scarcity in wool. It will be in demand, and prices will be maintained very high. Strong efforts will be made to depress prices previous to the incoming of the clip, but that after it has passed into second hands, wool will rise just as certainly as it did last year, and its price will be governed largely by its scarcity and the demand for it which will be lively all the year."

Prepare for the Fairs.

It is only about two months now before the Fair season opens, and only three months to the State Fair. Those who intend to exhibit machinery or articles of manufacture, and who have not already prepared their articles for that purpose, will do well to be making preparation.

Those who intend to exhibit fine stock, should see that their animals are well cared for from this time on, that they may be in good condition. Stock should not be over fat; but to show well and do credit to their blood, and give satisfaction to their owners, they should be in good condition. It takes time and care to place them in that condition.

JAMES A. STIDOR of North San Juan has for sale a Grape Vine Harvester, used to trim grape vines, and is being extensively introduced in the East, and is pronounced the best thing of the kind extant.

A Singular Hybrid.

We give herewith a pictorial representation of a singular hybrid—a cross between a domestic cock and a guinea-hen. The following is its history as furnished to the *Country Gentleman* by Mr. M. Flansburg, of Stony Hill, Albany County, N. Y.:

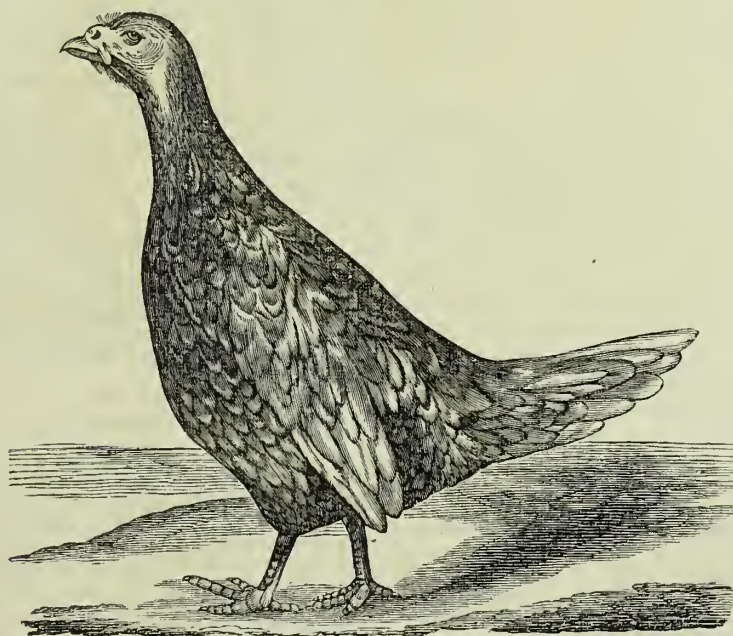
In 1865 Mr. F., in setting a guinea hen, being short of eggs added several of the common domestic fowl, the brood from which were hatched and reared together. The next spring two of this brood, a Dominique cock (half Shanghai) and a Guinea hen, mated, their amours not always being conducted in private. The eggs from this Guinea hen were carefully preserved and placed under a hen, together with a few turkey eggs. The Guinea eggs hatched in three and a half weeks; the turkey eggs not until the expiration of four. The chicks from the Guinea eggs were of a snuff color instead

Measurement of each wing, 14 inches; length of tail, 8½ inches. The casque or helmet of the Guinea fowl is absent. It has small wattles and a loose pendent fold of skin under its gullet, which is thinly covered with feathers.

Its shrill and discordant voice resembles the Guinea. If alarmed, its clamor is most annoying. When first introduced to the farm-yard, it was timid and shy, but became pugnacious when attacked by a domineering cock. There seemed to be no affinity between this bird and the barn-door fowl, but when a pair of bronze turkeys were added, its nature entirely changed, and it soon became destructive to young poultry. It much preferred the society of the turkey cock and followed him everywhere. From its ardent advances and endeavors to ingratiate itself with the turkey gobbler, it would seem to be of the feminine gender.

Tea Culture.

We learn that the attempt to grow tea in California as an article of profit, can be set down for the present at least, a complete failure. The



A HYBRID OF COCK AND GUINEA HEN.

of the usual color of young Guineas; only three hatched, two of the chicks only lived a day or two, and the one here represented was the only one that matured.

The cross is interesting, for the reason that birds so dissimilar seldom mate—so seldom that it especially deserves to be brought to notice. Tegetmeier says, in his book upon poultry, that the Guinea fowl sometimes crosses with the domestic fowl, and remarks: "When produced they are true hybrids, being perfectly sterile, and incapable of reproduction among themselves, or with either of the species from which they were derived."

The illustration which we have copied from the *Country Gentleman*, was carefully drawn from life, and has been as carefully reproduced. In appearance it does not strongly resemble either parent. Its plumage is not unlike that of the ordinary domestic fowl. Its feathers are mottled alternately with a confused sprinkling of brown, drab and white, freckled with black, the white predominating, which, at a distance, gives it a greyish hue. It is now five years old. It is growing lighter in color as it advances in years. When only in moderate condition, it weighs 6 pounds and stands 13 inches high. Length of its bill, 1¼ inches; length of leg, 4¼ inches. Its total measurement in length is 30 inches; in the stretch of its wings, 36 inches.

El Dorado Co. experiment from which so much was expected, because conducted by or under the supervision of one well informed and experienced in tea culture in Japan, is pronounced a miserable failure pecuniarily, as well as a failure to grow the plants satisfactorily. Even had the plants survived their acclimation and become established, it is quite evident that years must have elapsed before anything like a profitable picking of tea could have been made.

We learn that the same poor success has also attended the tea experiment at Calistoga; the trees do not grow well, indeed are dwindling down, and to all appearances will amount to nothing. And yet it is not a fair test of our soil and climate for the production of tea. We find all through the State, that fruits and vegetables succeeding admirably in one locality, are wholly unsuited to another, and the same rule may apply in the case of tea.

We fear, however, that we may find that climate has much to do with our success. Tea of the Asiatic countries grows under a climate similar to that of the Atlantic States, or one of alternate rain and sunshine during the whole of summer. It is not so here, and that very difference of climate may be found an insurmountable barrier to its successful culture. We hope, however, that some amateur will gather up what there are of tea plants now in California,

and by transplanting them to a different soil, and if possible a different climate in some respect, still test in a careful manner the question of its possible acclimation and profitable growth.

Silk Culture.

We wish that those persons who are this year engaged in feeding silkworms would give us the result of their operations. There are two or more reasons why we want them to do it. We want to be able to state that after all, there is no difficulty in raising silkworms successfully in California. That the failures heretofore have all been through inexperience in management or a want of the proper food for the silkworm.

After these points are settled, and the fact determined that, skill alone, is all that is wanted to insure success, then we want every one who has been thus successful in their rearing, to point out to us the profit and loss of the same; whether the cocoons or reeled silk will sell for enough in this or any other market, to pay the cost of production, and a fair profit for time and labor bestowed.

It is desirable to know further whether it will do to embark in extensive and measurably costly investments for land, cocooneries and all the necessary appliances of a large establishment. Whether we have the best kind of leaf for feeding, or owing to our too hot climate, it is not too dry and crisp, and dries too quickly on being fed to the worms.

A Word of Caution.

We would not as yet desire to be considered wholly skeptical in this matter of growing silk successfully in California; and yet we have endeavored to caution to some extent, those who seemed to be putting too much confidence in it, as a specially worthy their best efforts, that possibly they were destined to be disappointed. We do not believe any farmer can get rich very fast who confines his efforts to a single production, requiring his attention but thirty or forty days in a year, and that is as long as silkworms are fed in any other country except California, and about as long as they can successfully be fed here.

As many silkworms as can be fed by the aged, the women and children of the household, to whom no direct wages are paid, and in localities where the climate and the mulberry leaf are both as they should be, and no buildings are required beyond what can be spared from the house, barn or other convenient out-building of the homestead, that many can be grown successfully in most seasons and profitably.

But when extensive orchards of mulberry trees are to be planted and cultivated, and correspondingly large and costly cocooneries are to be built, and wages to be paid for labor in carrying on the work of picking the leaves and feeding the worms, and trusting more or less to inexperienced hands—the novice in silk growing had better think the matter over seriously before embarking deeply in the business; for it never has paid in any other country and we doubt whether it ever will in this.

SAVE YOUR STRAW.—Every farmer should carefully stack and save his wheat straw for fodder for his stock during the fall, winter, and spring. Good wheat straw grown in California, is almost equal in value to hay grown in a country where it rains frequently during the summer season. The farmer who burns this straw, or allows it to go to waste, loses just about one-third the profits of his wheat field each year. If you have no stock to feed your straw to, buy them and keep them, and thus utilize your straw.

CORRESPONDENCE.

Notes of Travel in Solano and Napa Counties.

[By our Traveling Correspondent.]
South Vallejo.

South Vallejo is one of the towns that has sprung up in California since the State has begun to turn its attention to railroad building. It bid fair to outstrip its sister town, North Vallejo, until the rains of last winter washed away a large portion of the railroad which connected it with Sacramento, and over which the majority of travel passed from San Francisco to that place. For the benefit of your readers in the interior it may be as well to state that this place lies about twenty-six miles northeast of the metropolis, at the junction of Carquinez Straits and the Napa river, at the head of the Bay of San Francisco; it is situated on the opposite side of the river, or straits, from Mare Island, the Naval Depot of the Pacific. It contains about 200 inhabitants and in addition to the railroad works it has a number of manufacturing establishments and carries on quite a trade in lumber, grain, etc.

Flour, Grain and Lumber.

The Starr Mills, of which Starr Bros. and Campbell are proprietors, is one of the finest of the kind in the State. The building is 130x75 feet on the ground floor and five and a half stories high. The ground plan was laid in 1868, and was completed in 1871, at a cost of \$110,000. It is run by an engine of 125-horse power and has six run of burrs—five for wheat and one for corn and barley. It has a capacity of turning out 400 barrels of flour every twenty-four hours. There is a warehouse capacity in the mill for storing 8,000 tons of grain in sacks, besides 500 tons in bulk. They use the Eureka patent packing machine, for both flour and bran, putting the same weight in less space than is done when packing by hand. From fifteen to twenty men are regularly employed at this institution. The facilities for handling and shipping grain, flour, etc., are very convenient.

Messrs. Doe and Moore are doing the principal lumber business of the place, and manage to sell about 4,000,000 feet of the different kinds. They have nearly 2,000,000 on hand at present writing.

The first and only grain elevator ever erected on this coast is located here, and is the property of L. Friedlander, of your city. This institution is intended for shipping grain in bulk. It cost \$250,000 to erect it, and up to the present time has not proved a paying institution, but as the farmers of the adjacent country are about taking action on the subject of shipping their grain in bulk, to save cost of sacks, etc., the elevator may yet become a financial success.

South Vallejo has one fine hotel—the Frisbie House—and two mercantile establishments; B. Egery is proprietor of one and H. C. Hart of the other.

Vallejo

Is one and one-half miles north of the above mentioned place. The activity of the town is almost entirely dependent on the amount of work under way at the Navy Yard, Mare Island. The population is fluctuating, and when the departments at the "Yard" are all under full headway the town is filled proportionately. The population runs all the way from 3,000 to 8,000, dependent on the circumstances mentioned above, since the workmen at the "Yard" all live at Vallejo and go over in the morning and return at night. Vallejo is composed principally of hotels, boarding-houses, (and in the winter mud enters largely into its composition). Of hotels there are about half a dozen second-class; the boarding houses number hundreds, and a fine first-class hotel is in course of construction which will probably be completed by the 1st of July. The latter structure is on the corner of Georgia and Sacramento streets; its size will be 150x130, two stories high; the first story, however, will be used for a bank, stores, etc. The hotel portion will occupy the entire upper story and will contain forty-seven rooms. The architecture is modern and the building will, when completed, cost \$70,000. B. B. Jackson is the builder and J. B. Frisbie proprietor and owner.

Other New Buildings.

The Odd Fellows have just completed one of the finest halls in the State, for its size. It is 50 feet front by 100 in length, two stories high, fire proof and the lower

portion is occupied by stores, while the upper is used by the Order. The structure cost \$25,000.

The Vallejo Land Co. are about to erect warehouses with capacity to accommodate nearly or quite all the product of the county, of wheat, wine, etc. It will at least hold 1,000,000 gallons of wine, and 10,000 tons of wheat.

The Vallejo Savings and Commercial Bank is one of the solid institutions of the town. It was incorporated May 3d, 1870, and has a capital stock of \$300,000. They have a Board of five Directors which manage the institution. J. B. Frisbie is President, and J. R. English, Cashier.

The principal dealer in lumber at this point is A. Powell, who trades in wood, lumber, etc., of all kinds, and has also yards at South Vallejo and Davisville.

Napa City

Is a town of 4,000 inhabitants situated at the head of navigation of Napa creek, and is the county seat of Napa county. It is fifteen miles northeast of Vallejo, or about forty from your city. It is at present one of the liveliest of the agricultural towns of the State. It has two fine hotels—the Revere House, John W. Sharp, proprietor, and the Napa Hotel, presided over by John Hogan, one of the "Green Isles" most jovial sons, well liked by all. There are two

Banks

In the place. The Bank of Napa has a capital of \$250,000, and has just completed a fine new building, 25x50, and two stories high, at a cost including lot and fixtures of \$3,000. For strength of safes and beauty of finish it is second to none of its size in the State. It is managed by a Board of seventeen Trustees; C. Hartson is President, and W. C. Watson, Cashier.

The Napa Valley Savings and Loan Society has a capital of \$100,000. It has seven directors, a finance committee of three; President, Geo. E. Goodman; Richard Dudding, Secretary. This Society was incorporated Sept. 25th, 1871. Both of these institutions are a necessity in this section, and are doing a good business. Napa has two

Tanneries.

One of which is run by B. F. Sawyer & Co. This establishment is a little different from the ordinary run of tanneries in the State as they do not manufacture any of the heavier kinds of leather, but make a specialty of glove kid, buckskin and fancy linings. It may be also called a wool pulling institution. It is located on Napa creek, in the suburbs of the town. They turn out 300 sheep skins and 100 buckskins daily. They purchase wool, hides, tallow, etc. The heavier hides are shipped and eventually find their way into other tanneries. Twenty-five men are regularly employed.

The Napa tannery, Algeo & Co., proprietors, is situated within the city limits and is considered one of the chief manufacturing institutions of this section; making all the principal descriptions of leather that are made in the State, and turning out 1,000 sides per month. Chestnut oak bark that is used for tanning commands \$16 per cord delivered here. Fifteen men find regular employment.

Other Interests.

The Banner Warehouse, located at the landing just below the railroad bridge is 60 feet front by 200 deep. It is fire-proof, and has a capacity for storing 4,000 tons of grain. Ralph Ellis is proprietor.

The Real Estate Interests here are quite large, so much so that an association exists for the sale of property in Napa, Solano, Sonoma and Yolo counties. Full lists of their transactions are reported in the papers published in Napa City—the *Reporter* and the *Register*. Messrs. Sterling and Thompson are the principal Real Estate Agents of the place, and will furnish information in that line to inquiring parties.

Berryessa Valley.

A beautiful valley of which but little has been said or known lies to the northeast of Napa City, called the Berryessa Valley. In the centre of it is situated a pretty little village known as Monticello, 27 miles from Napa City, containing about 250 inhabitants. It has two hotels, two mercantile establishments, blacksmith shops, etc., proportionate to its population. The entire valley is owned by six or eight land-owners although there are some thirty or forty "renters" doing successful grain-raising in the section. Putah Creek runs westward through its centre; it abounds in fish and is a beautiful stream. The crops of hay and grain will for the former be a full crop and for the latter at least a half crop this year.

The upper end of this valley passing the Sulphur springs and in the direction of Knoxville is rough, broken and mountainous, and was only some two years since annexed to Napa from Lake county.

A Fine Farm.

In the lower end of this valley two miles south of Monticello, A. Wester is cultivating some 1,100 acres of land, 400 of which is in wheat and barley the present season. Mr. W. is the possessor of some 100 head of fine cattle, employs from 3 to 4 men and having been for some years a butcher and curer of meats in your city, he supplies his own wants in that direction on his farm. Mr. Wester showed us some of his preserved bacon and hams, which are kept in a somewhat novel manner. After the hams and bacon are cured in the usual way they are simply packed in layers of cracked wheat, either in barrels or boxes, in a dry cool cellar. By this means he informs me that the wheat becomes damp from the moisture of the meat and an experience of two years has proved that the meat will keep as fresh and sweet as when first "laid down."

A Beautiful Place.

Situated 6½ miles north of Napa City, in the rolling hills of the Coast range, is one of the prettiest places imaginable. Its peculiarities are that although so close to the city, it possesses the natural advantages of a locality in the centre of a wild country. One would imagine from the scenery that he was in a miniature "Yellowstone" and that he was hundreds of miles from any civilized community. In looking from the house, down the hill, a series of beautiful fountains are seen, supplied with their crystal liquid from a spring, high up on the hill. Every conceivable kind of flower and tree has been cultivated on the place, and it abounds in artificial lakes, fountains, quiet walks and shady bowers. There are nearly two miles of carriage drive in the vicinity, all under cover of wild foliage, and from every turn you make on the road a fine view presents itself, and the visitor is surprised at the variety and beauty of the surrounding scenery. The farm is the property of H. Hudemann, and comprises some 2,200 acres, 300 acres of which is in hay this season. The dairy department is extensive, containing 140 cows, and 100 head of calves. There are also 1,400 head of sheep, and considerable other stock. Mr. H. is an extensive land owner elsewhere in the county. He has owned this beautiful spot since 1857, but only began to improve it about 9 years since. It is one of the most romantic rural retreats in the State, and only consideration for Mr. Hudemann (who is a bachelor, and you have many lady readers,) causes me to desist from a more minute description.

L. P. MC.

Opium Gathering.

EDITORS RURAL PRESS.—We have two acres of the "Turkey Poppy" just blooming. It looks very fine. There must be over ten acres, in this settlement, all looking well. Please tell us in your next issue of the RURAL PRESS, when, and how, to gather the opium, which will exceedingly oblige

Riverside, Cal., June 5th, 1872.

The practicability of growing the poppy for opium and oil in California, is so evident from the success which has attended its culture in other countries, and the importance which would attach to the industry here, if properly conducted, and our desire to oblige the experimenters of Riverside, inclines us to re-print extracts from several articles we have once before given to the public on this subject, in the columns of the SCIENTIFIC PRESS, in Feb. of 1870:

Different Modes of Obtaining the Juice.

There are two modes of obtaining the juice. The first is by cutting slits in the seed-head or capsule of the plant with the point of a sharp knife, and carefully gathering the juice which exudes.

Another process is to cut off the heads of the plant, grind them to a pomace in a cider mill, and press out the juice in the same manner as in making cider. The former is the process most generally employed and productive of best results. It is also more simple, and unattended with any requirements for machinery.

Some employ both methods—first cutting slits in the capsules and gathering whatever juice may exude, and afterwards cutting off the capsules and mashing them in the mill. The two products thus obtained are mixed.

Saving and Utilizing the Seed.

The seed of the poppy, in addition to its use for replanting, (as the plant is an annual) is in large demand for the manufacture of table oil. When the capsule is cut off for grinding, as above noticed, it must be done before the seed has ripened or formed its oil; so that in that process the seed is lost. But in collecting the juice by incision, the capsule is not so badly injured but that it will still mature its seed. The seeds are worth, for oil, about one-

half as much as the juice for opium. In saving seed for replanting, the plant should not be robbed of its juice, as it is all needed to form a perfectly healthy seed, such as is required for producing a vigorous plant. From what we have been able to learn, too little attention has been paid to this matter—the seed generally sown having been that which has matured in a wounded capsule.

Obtaining the Juice by Incision.

The proper time for collecting the juice is a few days after the fall of the flower leaves, when the seeds are fully formed, but before they begin to mature. In the process of slitting, the proper instrument to use is the sharp blade of a small penknife. Before commencing, take off a capsule and examine the outer walls of its cells, carefully gauging their thickness. Then wind some thread around the knife-blade so as not to leave enough of the point naked as to cut through into the cell. A little experimenting on one or two capsules will give the operator a reliable gauge. If the capsule is cut through, the juice will find its way to the inside of the cell, where it cannot be obtained, and the capsule will be so injured as to be incapable of properly maturing its seed.

Experience has shown that the best form for incision is to make it spirally, from the point or top to the base of the capsule. One slit, passing entirely around, is said to be sufficient; or two may be made, largely overlapping each other. A single cross-cut, passing entirely around the capsule, about one-third up from its base, is also found to work well; but a number of parallel cuts, from top to base, give very poor results. A very slight incision is all that is needed. A little practice will enable the operator to perform the work very rapidly.

Throughout the East the slitting is done either early in the morning or late in the afternoon. In both cases the juice is allowed to exude and partly dry on the surface for several hours before removal. It is then scraped off with a small iron scraper—the blade of a dull knife would form a very good instrument. Some prefer to slit towards the close of the day, with the idea that the damp night air is more favorable for the exuding of the juice than the dry air of daytime. This method of collecting the juice of the poppy was described by a Greek writer more than 1,800 years ago.

The Germans and French generally collect the juice from the capsule before it begins to dry, and very soon after slitting—one person passing ahead to slit the capsules, while others soon follow after, wiping off the moist juice with the fore-finger and scraping it off the finger by drawing the same over the edge of a dish in which it is collected. After the juice is so collected, in any convenient vessel, it soon becomes hard and tough, and of a gray-brown color.

Subsequent Treatment.

As soon as it becomes of a doughy consistency, it should be worked up into balls with a spatula; the warmth of the hand or of the sun is sometimes required to make it work properly. No more skill and but little more time is required in this process than is employed in working butter into rolls. This is all the process required in preparing the opium for sale. In fact, it may be put in the market in forty-eight hours after it is collected.

Each head yields but a few grains of dried juice, and is exhausted by one cutting; a second incision at any time afterwards, fails to yield any juice, if the work has been properly done. In India, a blade with three points is generally employed; but careful experiments in Europe seem to show that a single blade gives equally good results.

Mode of Collecting the Juice by Expression.

In collecting by expression, plants are cut from the stem and ground or mashed to a pomace, as already stated. In this operation the vat to hold the pomace should be lined with tin or brass. Before putting the pomace in the press half a pint of alcohol is added to every forty or fifty pounds of pomace, the whole well stirred together, and allowed to stand for about an hour. The mass is then ready for the press. The alcohol used unites with the juice and renders it limpid and more easy to be taken away from the pomace by the action of the press.

The liquid, as it comes from the pomace, should be received into a settler, where it should be allowed to stand about one hour, during which time the green matter, or watery juice of the plant, will settle to the bottom, so that the opium liquid may be drawn off from the surface. Funnels should be properly arranged for that purpose. This latter should be immediately placed in shallow plates of tin, so as to stand about one-half an inch deep, and these plates arranged on suitable racks in a drying room. This room should be tight, and so arranged that the heat and moisture may escape from a single opening at the top. The temperature should never be allowed to fall below 130° F., or to exceed 160°. If the heat gets down, the juice will become sour and spoiled; if too high, it will scald. The drying or evaporating process must be carefully watched, day and night, until completed, and it should be continued until the opium is dry enough to scrape off from the plates, care being taken not to allow it to get too dry for that operation. When taken from the plates it should be moulded into balls or blocks of about one pound weight, when it is ready for market. There is no more difficulty or mystery about the business, nor as much, than in making butter. In cutting plants for this process, care should be taken that none should go to the mill until they are sufficiently ripe—fully as ripe as required for the previously described process.

MISCELLANEOUS.

Effects of Electricity on Milk, Etc.

The *Milk Journal* states that, in an address before the North Western Dairyman's Association, Mr. X. A. Willard stated the following interesting facts:

Mr. Andrew Cross, the celebrated English experimenter, considered that the roots and leaves of plants were in opposite states of electricity; some of his experiments in this direction are very interesting. He cut two branches from a rose tree. They were as nearly alike as possible with the same number of buds, and both equally blown. An arrangement was made by which a negative current of electricity was passed through one, a positive current through the other. In a few hours the negative rose drooped and died, but the positive continued its freshness for nearly a fortnight; the rose itself became full blown and the buds expanded, and survived an unusual length of time. Again, he was able to keep milk sweet for three weeks in the hottest weather of summer, by the application of a current of positive electricity.

On one occasion, he kept fishes under the electric action for three months, and at the end of that time they were sent to a friend, whose domestic knew nothing of the experiment. Before the cook dressed them, her master asked her whether she thought they were fresh, as he had some doubts. She replied, that she was sure they were fresh, indeed, she said, she would swear they were alive yesterday. When served at table, they appeared like ordinary fish, but when the family attempted to eat them, they were found to be perfectly tasteless; the electrical action had taken away all the essential oil, leaving the fish unfit for food.

However, the process is exceedingly useful for keeping fish, meats, etc., fresh and good for ten days or a fortnight. Now this is consistent with our observations and the facts known to every one in the habit of handling milk. When the condition of the atmosphere is in a negative electrical state, or shows a deficiency of positive electricity a state of weather which we designate as sultry, close, muggy, and the like, there is always difficulty in keeping milk sound. Even in good, healthy milk, the fungus germs common to all milk increase and multiply with great rapidity, producing the common lactic acid fermentation or souring of the fluid; but in case fungi from decomposing animal or vegetable matter comes in contact with the milk, rapid decomposition takes place, and we have rotten milk, putrid odors, and floating curds. The exposing of such curds to the atmosphere, as well as the aeration of milk to improve its condition, are both philosophical, because these minute organisms of fungi are affected by the oxygen of the air, which checks their development and multiplication.

The influence of electrical action is a question entirely new to the dairy public, but is one concerning which I think some useful suggestions present themselves for our consideration. When the electrical equilibrium is disturbed, or when the state of the atmosphere indicates a preponderance of negative electricity, we are all made aware of the fact by its depressing influences. At such times it is important that we take more than ordinary care in the handling of milk; that it be kept out of harmful odors; that attention be given to its aeration, and such treatment be given it as shall be inimical to the growth and development of the fungi. And again, the fact that milk may be kept sweet a long time in hot weather by electrical action will offer a very important suggestion to inventors in the preservation of milk, and perhaps to the improvement of cheese at the factories. I believe that we are only on the threshold of the cheese making art, and that as we become better acquainted with the laws of Nature and their application, great progress is yet to be made in every branch of dairy husbandry.

SENSATION IN PLANTS.—M. Figuer believes that a plant has the sensation of pleasure and of pain. Cold, for instance, he says, affects it painfully. We see it contract, or, so to speak, shiver under a sudden or violent depression of temperature. An abnormal elevation of temperature evidently causes it to suffer, for in many vegetables, when the heat is excessive, the leaves droop on the stalk, fold themselves together and wither; when the cool of evening comes, the leaves straighten, and the plant resumes a serene and undisturbed appearance. Drought causes evident suffering to plants, for when they are watered after a prolonged drought they show signs of satisfaction.

The sensitive plant, touched by the finger, or only visited by a current of unwelcome air, folds its petals and contracts itself. The botanist Desfontaines saw one which he was conveying in a carriage fold its leaves while the vehicle was in motion and expand them when it stopped—a proof that it was the motion that disturbed it.

Sensation in plants is of the same kind as in animals, since electricity kills and crushes them as it does animals. Plants may be also put to sleep by washing them in opium dissolved in water, and hydrocyanic acid destroys their vitality as quickly as it does that of animals.

STAINING HORN.—Horn may be stained by being immersed in a solution of nitrate of silver, and then exposing it to sunlight. Or it may be steeped in a hot dilute solution of bicromate of potash, and then in a decoction of logwood.

Faults in the Plans of Dwellings.

How frequently it happens that in the most elegant houses there is often to be met, somewhere, a want of comfort or accommodation! The hall is either too wide or too narrow; the stairs communicate to close to the hall door, or have the leading flight too long, making the ascent tiresome. This latter is a serious fault, and yet one that is too general. The parlors, which are always laid out with great attention to effective appearance, are seldom really comfortable. There is no room for furniture unless the cabinet maker manufactures articles to fit the spaces left to his care. Many a sofa or piano has to intrude on a window—may sometimes to block a doorway—while spacious openings are left for sliding doors, in order to give an appearance of extent by throwing the front and rear parlors into one.

The invasion on the space properly intended for furniture has become so "fashionable" of late days, that it has compelled the introduction of many little trifling articles which rather tend to take from the dignity of the chief rooms of a pretentious dwelling, and make of it a mere "baby-house," but like everything that custom has inured us to we derive pleasure from these miniature comforts, just as we become satisfied with the nutshell stateroom on a steamship to which we are confined.

But it is in the plan of the chamber story that the most uncomfortable arrangements are to be found. As for instance, there is either no space for the proper location of a bed, or it must be so placed as to subject the occupant to a strong draft of air and its unfortunate consequences. The toilet table, the bureau, the mirror are all or some one of them without a fit location. The windows are all injudiciously placed, or the chimney so inconvenient as to be worse than useless. The door opens awkwardly from the placing of a chair or table behind it, or perhaps when open it exposes the room unpleasantly. Wardrobes are either wanting, or if present, are away from the window, so as to be dark and otherwise inconvenient.

These are but a few of the serious faults of our modern dwellings—faults which might have been avoided if the necessary room for furniture had been taken into consideration during the composition of the plan, and if the artistic effect strained at in the exterior had not been permitted to crowd out the comforts of the interior. He is a sensible man, indeed, who weighs well the wants of his household, and lets external display occupy a secondary place in his plans. The comfort of his inner home is more valuable and more lasting to him than the passing praise which an architecturally appearance might call forth from the outer world.

How few there are who build understandingly! The architect produces his design, and it is canvassed as to its merits and demerits, but always with a view to "appearances." "This will be a fine room, pleasing in all respects," is a common remark, but the necessities which we have mentioned convince the proprietor that he overlooked the points that go to make it comfortable, and he and his household now unite in blaming the architect for want of forethought in the erection of so pretty yet so very uncomfortable a house.

Doors should always slide. This mode is far superior to hanging on hinges, as the opening of a sliding door does not interfere with the regulation of furniture in an apartment, and the sliding is so simple, and easily acted on, that it presents great advantages over the old fashioned door, which it will doubtless yet supersede. At present it costs more than hanging, but if it became general, the sliding mode would be cheaper down to a figure that would bring it within the reach of all. A partition wall need never be over six inches thick to give room for sliding doors. In fact, in small houses, a four inch partition may be made available for this purpose by using inch plank, in four inch breadths, for the inclosing of the door.

Sliding doors for wardrobes and closets would often prove more desirable; they do not impede the light as hinges often do. Above all things attention should be given to the accommodation of bedsteads, chambers, and at the same time secure a fitting place for the toilet. Light and ventilation are great objects in sleeping rooms, for on these depend the health of the occupant.

As regards the ventilation of a house, the object is more easily accomplished by means of a cupola over the stair chamber. All the rooms can be ventilated by this means in the coldest days in winter or during the prevalence of a storm without opening a window to admit air. The heat of the basement furnace under the hall, where it should be placed, would aid in the complete ventilation of the house in winter. A fan, worked by a small calorie engine in an air chamber under the hall, would effect thorough ventilation in the summer season.

Attention to these and a hundred other things which go to make a comfortable house should be the aim of him who would be successful; and of all things, he should never fetter his architect's efforts with considerations of external display at the expense of internal convenience, comfort and happiness.—*Pittsburgh Register*.

FIREPROOF BUILDINGS.—If you will have wood floors and stairs, lay a flooring of the thickest sheet iron over the joists, and your wood upon that and sheath your stairs with the same material. A floor will not burn without a supply of air under it. Throw a dry board upon a flat pavement, and kindle it as it lies if you can. Prevent drafts, and, though there will be fires, no houses will be consumed.

HOME AND FARM.

Economic Value of the Malva Tree

The ultimate prosperity of California depends greatly upon her manufactures, and on being in a measure independent of the danger of a dry season, which makes feed for cattle rise to such exorbitant prices, that the entire profits of cattle-raising and dairy products are swallowed up for two or three years. To meet this danger, it may be well to call attention to a plant or tree which in all seasons can be made to take the place of pasturage for cattle or sheep, and which, after the period of usefulness as feed has passed, can be converted by manufacture into various merchantable products.

We refer to an evergreen plant which, in reality, grows to the dimensions of quite a respectable tree, often reaching as high as thirty feet, and having a circumference of two or three feet at the ground. The Spaniards call it Malva. For several years we have observed this plant or tree closely, intending to call attention to it as a means of subsisting cattle, as they devour its leaves with avidity, and with cows it seems to produce more and richer milk than clover or any other prepared food usually given. Cows, horses and sheep all seem to have the same fondness for it, and will at any time leave fresh grass or hay for it, and seem to take on flesh rapidly while subsisting on its leaves for any length of time. As fast as the leaves are eaten off fresh ones take their places and grow with astonishing celerity, thus keeping up a perpetual supply, summer and winter, whether the season be wet or dry.

Native Californians have many uses for the leaves and seeds of this tree, one of which is to make a decoction of the leaves for use in fevers, summer complaints and dropsical swellings, and also poultices of the bruised leaves for painful and inflammatory wounds.

A neighbor informs us that he planted these trees, almost two feet apart, around the entire circumference of a two acre lot, in January, at which time they were about two feet in height, and from May on through summer his two cows subsisted entirely upon the leaves, and gave a larger quantity of milk than ever before. In the meantime a hive of bees worked on the flowers, which bloom seven or eight months consecutively, only ceasing when the seeds form.

The average duration of these trees are seven or eight years, then they loose their vigor; the leaves fall, leaving the branches bare, except for the long fringe of flowers and seeds, which resemble those of the field mallows, hanging the entire length of the limb. The seeds then fall and the next season spring up in numberless shoots which can be pulled up and transplanted without danger, as they are exceedingly hardy. No draught injures and no frost bites them, and they need no further care after being planted.—*Oakland News*.

NEW VARIETY OF CUCUMBER.—In *Land and Water* we have a figure and description of what is called the new white spine cucumber. This, when raised on a trellis, grows to an enormous size, one vine having three specimens, each of them three feet in length, besides many others over two feet long. The flesh is said to be very solid, with but few seeds, and the flavor very fine. This method of growing cucumbers is recommended as furnishing a much superior result to that of allowing them to trail on the ground, as they thus grow finer, straighter, and with a larger yield. This new cucumber has the skin perfectly smooth. It is very short in the neck, and it is considered a decided gain to the resources of the vegetable gardener.

TO PRODUCE LARGE STRAWBERRIES.—An experienced horticulturist recommends the following for producing large strawberries: "Remove the soil around each hill to the depth of half an inch or more, without disturbing the roots; then spread evenly over an area of twenty inches in diameter, a pound or more of finely pulverized linseed meal or oil meal, and cover it with mellow soil; then spread a mulching of hay or straw two inches deep over the entire surface between the hills. Should the weather be warm and dry a liberal supply of warm water daily will greatly promote the growth of both vines and berries. Pull up the weeds and grass among growing strawberries, rather than cut them up with hoes, as a system of roots is formed near the surface of the ground, which should not be injured with a broad hoe."

WOMEN IN FARMERS' CLUBS.—Damascus, Stephenson county, Illinois, has a farmers' club, in the meetings of which the wives of the farmers take part. That they are sensible women, and that they are in a fair way to adorn, if not enlarge, their sphere of usefulness, may be seen from the following subjects which they have selected for discussion at meetings this winter: "Economy of rag carpets;" "House-keeping;" "Shall we dress for comfort or for show?" "How shall we plant and cultivate our gardens?" "What kind of flowers will prove most satisfactory, and produce the most pleasing effect during the entire season?" "House-cleaning;" "Do the size and location of our sleeping apartments have an influence on our health?" "Household economy;" "Home attractions;" "How can we best inculcate the love of truth and honesty in children?"—*Prairie Farmer*.

THE SWINE YARD.

Orifices in Hogs' Legs—Why Hogs' Lungs Become Congested.

All breathing animals require a full supply of fresh air to cleanse their blood and enable it to nourish their systems, so as to support life. Proper food and drink are also necessary, but no more so than fresh air. Doubtless, many people have observed little openings in the inside of the forelegs of hogs, and have been told that these openings communicated in such a way with the lungs as to supply them with a portion of air, and when they became obstructed from any cause, they would sicken and die, unless the obstruction was removed.

Many animals die that are never examined, to ascertain the cause of their death, as they are owned by those who have not the requisite knowledge for ascertaining the cause, or will not take the trouble.

Last spring my brother lost a sow that had been well kept, and was fat enough for pork at the time she commenced ailing. About ten or twelve days before she died she breathed with difficulty, and occasionally made an effort to cough, as though there was something wrong in her throat, but walked around and would try to eat but could not swallow, and he thought she was choked. Five or six days her forelegs and nose looked blue, her eyes were dull; but she was conscious of the presence of any one, and walked around some, till the day previous to her death, when she would open her mouth and gasp for breath.

On opening her, no obstruction was found in her throat; but her lungs were greatly congested, being covered with dark spots, and her blood was dark, as it would be if an insufficient quantity of air was received into the lungs to purify it and enable it to circulate freely through the system.

When this hog first began to breathe with difficulty, the obstructions in the orifices in her legs ought to have been washed out with clean suds, and it would have been a benefit to all the scurf, obstructed pores of the skin, if the washing had been extended over the whole system. Those little orifices in the legs, like the pores of the skin, serve a purpose necessary to animal health and existence. They are easily obstructed, but the obstructions must be removed to avoid the results.

By carefully noting these orifices in hogs legs one may see how easily they may become smeared with dirt, so exposed as they are to filth, and thus endanger life. There are five or six on the inside of each fore leg, the upper ones being larger than the lower one; and when hogs breathe with difficulty and their eyes become sunken, we may conjecture that these pores were obstructed and need washing well. So, also, if there is scurf or dirt on other parts of the body, it needs washing off, to promote health and furnish healthful meat.—*Cor. Prairie Farmer*.

TO PREVENT HOGS BITING EACH OTHER.—A correspondent of the *Prairie Farmer* says:—"Fifteen years ago I began feeding a large number of hogs on floored pens around a flouring mill, and they commenced biting each other. One hog would give another a bite, when he would run and squeal, and each hog he passed near would give him a bite, and thus they kept the poor animal going until he died. I would go to the pen and stop them, but they would soon commence again. I concluded they were feverish, which made them restless, and they just bit each other for the want of something to cool their fever. I tried a variety of remedies, and at length I tried feeding stove coal, which I found a complete remedy. I have continued ever since to feed my hogs all the coal they would eat, and have never had any more trouble with their biting each other."

CLOVER FOR HOGS.—An Ohio hog raiser advocates the system of pasturing on clover during the summer. He presents, as the advantage of this plan, the statement that an acre of ground in clover will pasture five hogs four months, and that it will take the corn from half an acre to feed them the same time. The cultivation of the corn he counts equal to the rest of the other half acre. He further claims that hogs pastured on clover are in far better condition than if fed on corn, as they are better framed, healthier, and eat better, and also states that the land is enriched by the clover pasturing.

FARMERS IN COUNCIL.

Oakland Farming, H. & I. Club.

The regular meeting of the Club was held Friday evening of last week.

Communications were received and filed as follows: From A. L. Bancroft & Co., S. F., requesting a list of members; A. A. Todd, Commission Merchant, S. F.; and San José Farmer's Club, containing resolutions concerning the tax on growing crops [published in report of that Club in another column.] Consideration of the last named communication was deferred; it will likely be discussed hereafter.

Rust in Grain.

Prof. Carr said the subject for discussion was "rust in grain." Some of the members had brought specimens of grain which showed rust. These were examined by the club, and discussion upon the subject was invited.

A. D. Pryal said that he had tried sub-soiling, and found it a good preventive for rust. He afterwards tried draining, and found it still better.

C. H. Dwinelle said the rust was simply a growth of fungus which originates in the substance of plants, and under favorable weather shows itself on the outside. It flourishes best in damp, warm weather. Drainage, and salt as a manure, had been efficacious all over the world. Most all fungus plants are injurious to stock. If the hay was made at a stage after the leaves had dropped off, he supposed it would not be injurious; otherwise it would be.

Mr. Pryal had had an experience of twenty years in regard to rust; he had seen our later grasses affected by rust. He believed it injurious to feed rusty hay to stock. He has had hay cut several times on account of rust; couldn't say that any of his stock had died from it; but would rather feed them on good hay.

W. Collins said they had rust every year in the neighborhood of his place, at San Buenaventura. They thought if grain was sowed early, before the heavy fogs came on, it would not be affected, but it was. Some thought Australia wheat would not rust, and tried it. Mr. Collins sowed ten acres, and it grew too rank; they had to cut it. Last year the drought came and none was raised. They thought this year if they sowed back where the heavy fogs could not reach, the grain would not be affected. They were mistaken. It rusted. As to feeding rusty hay to stock, he had done so, and the horses had not been affected.

Mr. Pryal—In England they have a way to prevent rust, by sowing coal soot broadcast, or by throwing the soot into the machine with the grain. This had been done for the last thirty years.

Mr. Collins told about the first blight he had seen in wheat. It occurred directly after the potato rot. It was in Scotland about 18 years ago. He never had heard what wheat rust was before, and he had lived there 30 years.

Mr. Dwinelle said it was a well established fact among scientific men who had studied the subject that the

Parasitic Fungus

Has different forms where it grows on different plants. He thought if the spores from a crop of wheat take root on barley, instead of producing the same form as it did on the wheat, it takes a different form. This in turn will not germinate on the barley, but go back on the wheat. Each form has its particular plant on which to grow. Some say that what is a white mildew on one plant is a yellow rust on another. He would not say that the rust on wheat produces potato rot, but it is known that the atmosphere that is favorable to the rot is favorable to the rust, and they accompany each other. The blight Mr. Collins speaks of may have been common rust. One year it might appear as rust, next year yellow mildew, and the next something else. If studied closely, it might be found to be the same thing in different forms.

Dr. W. P. Gibbons, of Alameda, said

The Fungus

May assume a variety of shapes. It may, on the stalk of barley, receive a greater portion of moisture or oxygen than on wheat. His impression was that the same spore may produce the same product although in a different form. We do not use the microscope enough, and too often become tired of following out our investigations. A great deal of mystery hangs about the solution of these questions that might be dissipated if we studied them thoroughly.

Prof. Carr asked if any one had ever observed, when the rust made its appearance, whether there was any cracking of the straw under the rust.

Mr. Pryal said he had examined the rust under a microscope. He observed globules, or blisters, minute substances similar to air bubbles on water, attached to the blisters. Had seen them larger on barley than on oats.

Prof. Carr said there was no question about the parasitic fungus being the cause of rust in wheat. There seemed to be a combination of conditions connected with its growth. He believed it more apt to grow and vegetate in plants somewhat enfeebled, just the same as parasites are more apt to attach themselves to animals not sound in health. It is worthy of inquiry whether the fungus would grow until a cracking in the straw allowed the juice of the stalk to exude. It was a question whether the cracking is a consequence of the growth of the

parasite, or the parasite is a consequence of the cracking.

Mr. Dwinelle here showed a sketch illustrating the way in which the fungus grows.

Parasitic Plants Illustrated by Prof. Carr.

Prof. Carr also drew the attention of the members to some illustrations on the wall, showing a number of the lower forms of parasitic plants. The red snow found in the northern regions is a plant entirely circular, with but one cell, and reproduces by dividing itself. Others consisted of a single cell in the body of the plant, with branches containing cells. The plant which causes the potato rot was explained. The little branches or tubes formed in the potato, present the appearance of a mass of roots. These threads grow and bring about the rot. The roots of the parasite grow and come out through the mouths in the leaves, or burst through the thin skin, and continuing their growth until a head is formed. When the plant comes to perfection, the head bursts and the spores fall to the ground. Then they are washed by the rain down to the tuber, to which they fasten and go through the same process again. The plants that produce the dry rot in wood, the mildew on grapevines, and the disease in the silkworm, were also illustrated by drawings, and explained by Dr. Carr. He believed that in most cases these parasites grew in unhealthy organizations. Doubtless in many cases the spores came from the atmosphere. The stem or stalk may crack from some cause, and these spores then attach themselves to the plant and grow there. Under all ordinary circumstances the air contains many organic particles. Some of the spores may attach to plants, others to decayed vegetation, or just where it is right for it to grow and develop. It is much to know these things, but more to know how to control them. To become acquainted with them and their law of propagation, observations must be made with the microscope. After the discovery of the cause of the silk worm rot had been made, by following out the rules laid down, the evil was alleviated to a great extent, and by continued investigation the trouble may be ultimately removed.

Dr. Gibbons Endorses Subsoiling and Draining.

Dr. Gibbons said he had been much interested in Dr. Carr's remarks, the more so as they accorded with his views upon the imperfect development of the plant itself. One of the members had spoken of the efficacy of subsoiling and draining. Roots require the oxygen of the air as much as do the leaves. If they do not have it, you will find dwarfed plants. In many places, the crops this year, with the ground perfectly saturated with water, is less than last year, when we had a drought. The heavy rains packed the ground so that it became impervious to the air, and the functions of the root thereby became impaired. The supply of nourishment derived from the soil has been limited, in proportion to that from above. If the supply above is greater than the root receives, we have a condition which produces an imperfect development; the nutritive functions are arrested, and the plant becomes the prey of fungi. The soil should be properly cultivated, and kept loose, so that the air may have free access to the roots. He believed that the rust was more apparent in adobe than in loose soil. Adobe soil can only be plowed at a certain time. If it were drained a different result would follow. Farmers were often too lazy, and do not take care of the soil. They go over too big a piece of ground in their desire to get a big crop, trusting in Providence to do what they should do themselves. More produce can be derived from one acre of well-tilled land than from five acres indifferently tilled. If adobe soil is well drained, it will not be so hard to manage in the spring, and if grain is culled out so none but perfect grain is put in the ground the crops would be better and freer from rust. If a grain of wheat is planted in a garden it will produce an unusually large product. Every leaf remains green. In the garden the ground is cultivated, the soil is loose, the air is admitted to the roots and the evaporation is less.

Potato Life.

Mr. Pryal remarked that it had been stated by high authorities that the potato loses its vitality after fourteen years.

Mr. Dwinelle saw no reason why the potato should not keep up its vigor to the end of time. He had never heard of any good reason for its losing its strength.

Mr. Pryal said he would bring authorities to prove that the life of the potato was but fourteen years, and that after that it deteriorated.

A. T. Dewey differed in opinion with Mr. Pryal, and instanced the peach-blow potato, which was scarcely affected by disease at the time the potato rot was so bad in New England. He was sure it had grown well for over twenty years.

Mr. Dwinelle had seen an explanation of the short life theory. If the potato is raised on the same land, year after year, without manuring the soil, it is likely to run down.

Mr. Pryal said the fact he had referred to was so well known in England and Ireland, that the scientific gardeners will not use any of the old varieties.

Dr. Gibbons said that at the time he was born, his father planted the blue-nose potato and it was growing yet. It was the only one that had stood the test. After cultivating it for forty years, his father had said it was the only reliable potato. It was remarked that the "Blue Nose" were all proverbial for stubbornness of character and that this might be an exceptional case in the potato family.

New Members.

The following new members were proposed

and elected: John Cary, of Brooklyn; Wm. H. Wood, Wm. Collins, John S. Collins and Edward Gill of Oakland.

Scale Insects.

Prof. Carr asked Dr. Gibbons if he would favor the club with a lecture or a talk upon some subject of his own choice at the next meeting.

Dr. Gibbons assented and announced his subject: "Scale Insects on Trees."

The Thistle Nuisance.

Mr. Dwinelle called the attention of the club to the thistle nuisance, and said if some decisive action were not taken soon the thistle would spread all over the country. Without wishing to be personal to any present, he believed the evil plant was of the Scotch family of thistles. It is of the white variety. He thought the Farmers' Clubs ought to use their influence to have it made a misdemeanor for allowing them to grow.

Mrs. Carr said she had seen the thistles in so many places that she thought them indigestible.

Dr. Gibbons said the thistle referred to came from Europe. It had been brought here in the belief that it possessed some healing properties.

Mr. Pryal said he believed the Board of Supervisors had authorized the Road Commissioners to extirpate them on the roads.

Essay on the Potato.

The Chair appointed A. D. Pryal to furnish the club with an essay at its next meeting. Mr. Pryal announced the subject: "Life of the Potato."

Napoleon Bigareaus.

Mr. Pryal stated that some eminent Eastern pomologists who were here last year, had said we had no Napoleon Bigareau cherries. He had brought some with him to show that we had. The club then adjourned and the members proceeded to sample and discuss some remarkable samples of fruit and grain contributed by several of the members. Mr. Dwinelle had some beautiful white currants and mammoth English gooseberries. Mr. Pryal showed some fine Napoleon Bigareau cherries, John Kelsey had sent in some fine Black Tartarian and Napoleon Bigareau cherries, and a sample of red cherry currants. Samples of grain were also examined, from Messrs. Dwinelle, Tait and C. Bagge. A bunch of grain from Twitchell Island was also shown, the heads of which measured over seven inches in length.

The Secretary mentioned that the absence of Mr. Webster, who was to deliver an essay, was probably owing to illness, he being known as a gentleman of promptness.

The next meeting occurs Friday evening, June 28th.

The Oakland Daily News gives the above well rendered report, with the following, regarding the

Interests of the Club.

We are gratified to note that the interest in this organization is steadily increasing, and that its permanency is assured. The club is but a few weeks old, but it already numbers some fifty members, among whom are several ladies. The meetings are very interesting and are much enjoyed by all who participate. They are not attended exclusively by members of the club; the public are cordially invited to all the meetings, and the opportunity to hear free discussions on industrial matters, speed with plain talk upon scientific subjects by scientific men. Suggestions and queries upon every variety of important subjects, is taken advantage of by many people from all parts of the county. The meetings of the club are held on the second and fourth Friday evenings of each month, in the chemical lecture room of the University. Prof. Ezra S. Carr, President, and A. T. Dewey Sec. retary.

San Jose Farmers' Club.

The Club meeting on Wednesday the 12th was well attended.

The Committee on the sale of the W. P. R. R. stock was allowed further time.

The Committee on the Alviso R. R. question also asked further time. They were progressing but were not quite ready to report. Request granted.

The report of the Committee on the Mowing Machine exhibition was read and adopted.

A communication was read from A. H. Todd, commission merchant, San Francisco, and on motion of the Club tendered Mr. Todd a vote of thanks.

Mr. Wade, of Alviso, addressed the Club, urging the members to avail themselves of the privileges of their organization and appoint an agent in San Francisco to represent them, who would charge but 2½ per cent. for commission.

W. H. Ware offered a series of resolutions, to the effect that the assessment of growing crops was unjust and unconstitutional and calculated to work much damage. That the forced construction of the law that authorizes the assessment of growing crops for the purpose of collecting taxes on the plea of its being property, should be condemned by every citizen. That growing crops could not be assessed at their actual value; and any law authorizing such a proceeding, was in direct violation of just laws, as predicated on human rights. The resolutions were laid over to be acted upon at the next meeting, when the subject will have been looked into.

The rust question was then taken up and discussed. It was shown that the rust had appeared this year in direct contradiction to all previous opinions on the subject, and many

causes were attributed for its appearance. Some held that it was a plant growing beside the wheat or grass, that produced the rust. Others, that it was caused by insects; but the most plausible theory was, that the rust is caused by the breaking of the stalks, and the sap exuding causes rust. When it rains and the sun comes out immediately afterwards, the stalks crack in places and the sap escapes. The question for next week is: "Hay and Haying."

Meeting of June 15th.

[Reported specially for the PACIFIC RURAL PRESS.]

Club met at 2 P. M., President Cottle in the chair.

Mr. Jessie Hobson was appointed Sec. pro tem. The President presented several species of troublesome field plants, of which he desired to learn the names, but none of the Club could give the desired information. One was our California wild thistle which Mr. Pebles said, when cured like hay, could be sold at the paper mill for \$8 per ton.

Committee on Railroad Stock reported progress, and were granted further time.

Mr. Caldwell for committee on the destruction of thistles reported that there was no law to compel people to kill thistles along the roads. But that the city authorities destroy them, when found along the streets within the city limits.

Report received and Com. discharged. The resolution of Mr. Ware was taken from the table and read as follows:—

WHEREAS, A law is now in force that compels the assessment of growing crops for the purposes of collecting a tax thereon for public revenue, on a plea of its being property of a positive and fixed value, and,

WHEREAS, Whatever value such property may have, can only be determined in the future, and the time is soon to arrive when a just value can be fixed, as on all other property; and,

WHEREAS, All growing crops have only an uncertain, fictitious and chance value, and as no legal, uniform and just assessment can be made on the same, therefore be it

Resolved, That we call upon every citizen directly or indirectly affected by such unjust assessment and taxation, to protest against, condemn and resist, such unlawful aggression on the part of Government as a despotism on the people,

Resolved, That any and all laws compelling such assessments and enforcing collections on the same are in direct violation of just laws as predicated on human rights. It is further

Resolved, That as the remedy lies with the people, that a copy of these resolutions be sent to every Farmers' Club in the State of California, and that their especial attention be called to the same.

Mr. Holloway thought the resolutions should be referred to a committee. He was afraid that the Club might act rashly if they did not consider the subject well and act advisedly. He thought the State Board the cause of the tax on growing crops. That there is no warrant for it in law.

A man might own a native grove of timber or might get rich from a crop of grass, without being taxed for either the timber or the grass, but if you plant a nut tree or sow a few acres of grain the greedy officials came at you for a tax. The grain may never mature or give any return to the farmer for his hard labor, while a revenue from the grass is sure, and timber can readily be sold as it stands in the field. Now this is unjust, it discourages the small farmers and operates to the advantage of large land-owners and graziers. The law is unjust, we should resist it and try to beat it in the courts.

Mr. Dubois thought we should go slow. It seemed to him that it was an effort of land owners to shirk their tax and make the tenant who cultivates the ground pay it. He thought the man who cultivates his own ground need not be affected by it, for the value of the crop should be deducted from the value of the real estate, and that the Assessor will make such deductions.

Mr. Gallimore wanted to know if there was to be a real assessment on growing crops. He thought it would only be nominal, perhaps one dollar per acre. He thought it was but right that crops should be assessed if all other property is to be assessed. A few years ago there were many exemptions, now but few; this is a step in the right direction.

Where the assessment roll last year showed twenty millions it will be thirty millions and the rate per cent. levied will be proportionally less. This thing does not alone apply to the farmers, all property is being assessed at nearly its full value and he thought it would work to the advantage of the farmers; this year it might go a little hard but he for one was willing to pay his tax. It was right, correct principles lay at the foundation; Mr. Ware could not agree with the last speaker. He contends for the principle at stake, and is opposed to taxing growing crops. He said he supposed the reason why there was a separate listing of growing crops, is that the land frequently belonged to one man and the crop to another, and the object was to tax the crop owner and not the landowner. He was opposed to the whole thing of taxing growing crops, it bore heavily on the poor renter, the crop having merely a fictitious and nominal value, no real market value.

Mr. Gallimore replied that a growing crop has real value—we can sell it, we can attach it, we can mortgage it, we can realize money on a growing crop as easily as on most any other property; let one of them offer his crop for sale, and see if it was not worth money. Mr. Cad-

well thought at least the cost of the crop should be deducted from the present value.

M. Pebles said the law was unjust and should be resisted. We ought to send producers to the Legislature, then there would be a stop put to this thing of benefiting large capitalists. Farming land as a general thing is assessed too high; land that will not rent for more than six dollars per acre, should not be assessed for \$100.

Mr. Holloway recommended that we refer this matter to a committee, that we might take action in proper shape. No doubt the whole thing is wrong. Mr. Bonner gave \$5,000 for the prospect of a colt, yet, who would think of taxing it; just so with our crops, yet they are being taxed.

Mr. Edwards advised the farmers to let the tax on the growing crops, go to the delinquent list, and then they would not need to pay, as the sheriff could not find it along about next March.

Mr. Chipman thought that it showed cowardice to talk of putting off and referring, we should come square up to it and vote now.

Mr. Gallimore considered the only way to reach it the matter, was by a constitutional amendment. That the Legislature had no power to exempt growing crops.

The question was called and the resolutions were adopted by a large majority.

On motion the Secretary was instructed to correspond with all the Farmers' Clubs in the State on the subject of the resolutions, and the Board of Managers of the Club were requested to take such steps in behalf of the Club as would tend to resist the tax on growing crops.

The question of "Hay and Haying" was laid over for discussion at the next regular meeting. Adjourned.

Santa Cruz Farmers' Club.

The Club met at the Court House on Saturday afternoon, June 1st.

A letter was read from the farmers' club of Contra Costa Co., in relation to the co-operation of the farmers throughout the State, for the purchase of grain sacks. After some discussion the Secretary was instructed to correspond with the Contra Costa Co. Club, stating that this club would co-operate with it, as far as in its power. Mr. Feeley moved that a committee of three be appointed to go before the Board of Equalization, and see that the property of large proprietors was taxed in the same proportion as the farmers', giving them power also to appeal to the State Board. The motion was adopted and B. Cahoon, D. M. Locke and R. H. Sawin was appointed as such committee. John H. Vester was proposed and elected a member of the club.

The Committee on the Fair requested further time to perfect its report—granted. The committee on the questions of the Sacramento Farmers' Club, requested until the next meeting to perfect its report—granted. Adjourned to June 15th, 1872.

[For Sacramento Farmers' Club see page 396.]

AGRICULTURAL NOTES.

BUTTE.

Enterprise, June 14: FOREIGN SEED (GRAIN).—Messrs. Griffith & Morehead have cultivated upon their farm this season quite a variety of foreign wheat, consisting of Adelaide, Chili, Mexican, Australia and Oregon. The Adelaide surpasses all sown and will yield from 40 to 50 bushels to the acre. Dr. Griffith sent to Pennsylvania specimen heads measuring from 5½ to 7 inches in length.

PROFITABLE TREES.—Some of the cherry trees in the Bidwell garden yielded this season \$200 to the tree. Their fruit sold in San Francisco for as much as sixty cents per pound—an advance over any cherries brought to that market.

STONY CREEK.—Mr. Butterfield reports unusually fine crops on Stony Creek, and the farmers busy with their hay.

FINE STOCK.—Mr. Chambers informs us that the fine stock on the Walsh ranch was never looking better than now. Sales of stock from this ranch amount to big money.

COLUMA

Sun, June 8: THE GNATS! THE GNATS! This is the cry that comes from the harvest field, the plain, the valley and hill-side. The gnats have from all accounts taken possession of the country, and are striving to make way with the inhabitants thereof. Men go veiled in the field and upon the highway. The bite of these little insects is of a very poisonous character, and there presence is a dread to the whole human family. They pay no respect to age or beauty, but seek the blood of all. Verily, the gnats are daily vexing the people, and causing much pain among the inhabitants.

CONTRA COSTA.

Gazette, June 15: THE HARVEST.—The weather continues highly favorable for all the late sown wheat, and that of early sowing is sharing the benefits and will be greatly improved, if the heavy growth stands up to fill, and it escapes rust, of which there is little apprehension so long

as the weather continues cool and breezy. The indications of rust which were observed in places a few weeks ago, so far as we have been able to learn, have not had any further development and are not likely to prove at all serious. Our street is quite lively with the preparations for harvest, and we have reason to rejoice in the prospect of a far better crop than there was any ground to expect a month ago, though it will fall far short of the average of our best seasons.

GRAIN SACKS.—The large actual and prospective demand on the stocks in hand and to arrive for dealers, keeps up the prices of grain sacks, which are quoted, from first hands, at from 17 to 21 cents. But, from the fact that many of the large farmers are likely, with the prevalence of these high rates here, to have ordered their supplies from the eastern markets or from Great Britain direct, and that outside speculators may also have sent like orders, it is possible that the stocks may soon be augmented so as to reduce the prices.

FRESNO.

Expositor, June, 12: RYE.—We saw some very long stalks of rye at Fritz saloon, from Mr. Jessie N. Musick's place, on Dry Creek, which measured over nine feet. Mr. T. W. Simpson, our County Assessor, says he can beat that on his place, just above Mr. Musick's. Tom, we think you were joking, if not, we want to see it.

We are informed that grass is abundant in the mountains.

MARIPOSA.

Gazette, June 14: HOT WEATHER.—For the last eight or ten days the weather has been extremely warm—the warmest of the season. In Mariposa, during the warmest portion of the day, the thermometer has ranged from 90 to 97 degrees and in localities on and near the plains still higher. At the town of Merced, on Saturday, the mercury stood at 115. One of the stage horses, on the up trip, Sunday, dropped dead the other side of Hornitos from over heat. We would mildly suggest to Yo Semite tourists that the weather up this way makes a broad brimmed sombrero comfortable. The hat of the variety known as "plug," is not just the thing for the trip as several parties have discovered to their great discomfort.

MERCED.

People, June 15: HARVESTING.—We took an extended tour of observation through the valley the fore part of the present week and noticed farmers on every hand engaged in harvesting their crops. We were informed by all with whom we conversed that their crops have turned out better this season than ever before.

FULL.—We learn from a correspondent, writing from the Yo Semite Valley, under date of June 9th, that the valley is completely filled with tourists who have come from afar to view the great wonders of the world—the huge boulders and grand falls of the Yo Semite that are on every hand presented to the eye.

FARMING MACHINERY.—During the past two weeks large numbers of threshers, headers, mowers, etc., have been shipped from San Francisco to this place, and have immediately been hauled off by farmers to be put into immediate use, and ere long our town will present a more lively appearance than ever occasioned by the large amount of grain that will be hauled here for shipment below.

THE CROPS.—I. D. Morley of Horr's Ranch, Stanislaus county, informs us that the crops between that place and Modesto are the finest he has ever seen in that section. He states that the barley field of J. W. Roberts on the Tuolumne river, comprising over two hundred acres, is one of the best in the State. Mr. Morley has resided in this valley for over twenty years, and is an observing man and an old farmer, and has been pretty much all over the San Joaquin valley within the past few weeks and pronounces the crops good upon every side, but says the heaviest crops he has ever seen are being harvested in this vicinity—on Bear and Mariposa creeks.

Tribune, June 15: LABOR.—Farmers in this vicinity experience much trouble in securing laborers for the approaching harvest. We have heard of \$50, and even \$60 a month having been offered to, and refused by, working men. In this connection, we note several drones hanging around town whose sphere of usefulness would be much enlarged in the harvest-field, where there would be a chance to earn an honest living and astonish their hands by honest labor.

NAPA.

Register, June 15: SOME FLEECE.—We think we saw on Wednesday afternoon, the largest fleece ever taken from the back of a single sheep on this coast. The ani-

mal is a merino ewe, belonging to Mr. G. Barth, of this city, and weighs naked, not over forty pounds. The fleece was taken off carefully and found to weigh thirty-five pounds full! It is, also, of the very finest quality, soft as silk, and of a beautiful golden tinge. That there might be no mistake or deception about it, we opened out the fleece with our own hands, and found it still whole, and almost as firmly woven together as a blanket. It covered an area of nearly eight feet square. At fifty cents per pound, this fleece would be worth \$17.50! Think of it, but don't go into the fleece business! Mr. Barth is the same who raised the famous steers that furnished the last Christmas beef for nearly all San Francisco.

PLACER.

Herald, June 15: SHEEP AND CATTLE FOR THE MOUNTAINS.—For the past ten days large droves of cattle and sheep have passed through here almost daily, for the mountains for summer grazing. The rush of stock mountainwards has been greater this season than we have ever before known it, indeed we believe the thing is being over done and that the supply of food in the mountains will be exhausted long before the fall rains set in.

SAN JOAQUIN.

Argus, June 15: COTTON.—The reports from all the cotton farms in the county this week are to the effect that, the plant is growing as rapidly and looking as well as could be desired. All the crops are in good order and the ground sufficiently moist to insure a thrifty growth until far advanced toward maturity. We design making a visit to several of the fields the coming week and will be enabled to give the result of our observations in our next issue. The rapid advance this branch of industry in Merced county shows what energy and well-directed industry in a good cause will accomplish even under unfavorable circumstances. In a year or two more we expect to see cotton the principal crop grown on all the moist lands of our valley, and that cities and towns will spring up where even villages cannot now exist.

HARVESTING.—Most of the farmers in this section of the county have finished cutting their barley crops and have commenced harvesting their wheat. In fact it is the busiest time with farmers that we have ever witnessed in this country. The scarcity of harvest hands is so great that the farmers are forced to do as much of the labor themselves as possible, and consequently few of them come to town, and therefore our place appears exceedingly dull and spiritless. Harvesting will continue late this year there being very heavy crops to secure with but little extra help.

SANTA CRUZ.

Sentinel, June 15: CROPS.—The late rains have materially benefitted all kinds of grain and vegetable crops in this county. In some instances where the fields were almost worthless, more than half a crop will be cut. More than half the grain crop will be first rate, and the corn and potato fields are doing finely. We also hear favorable reports of fruit, and from Vine Hill comes cheering reports that the grape crop will be above the average.

FLORAL WONDER.—Mr. G. Bowman has a wax lily in bloom, on exhibition in his store window, that is a great curiosity, attracting hundreds of delighted visitors. Over 75 splendid blossoms are on one stem, all perfect and full size.

TEHAMA.

Sentinel, June 15: HARVESTING.—The farmers around Red Bluff, and throughout Tehama county generally, are busily engaged in cutting and threshing their various cereal crops. The general opinion is that the yield will be much larger than last season. The great scarcity of labor is seriously felt among the farming community, and a considerable waste of grain will be the consequence of not obtaining a sufficiency of hands.

SOLANO.

Chronicle, June 15: AGRICULTURAL SOCIETY.—An informal meeting of subscribers to the Agricultural Fair was held yesterday, at the rooms of the Merchants' Protective Union, for the purpose of discussing matters connected with the enterprise. No action was taken, but the subscribers were of the opinion that immense benefits would result in this city by the holding of the Fair at this place. We trust to see an increased interest taken in the matter—as the Fair will bring many visitors to Vallejo and give them an idea of our advantages—and cause the expenditure of money amongst all classes of tradesmen.

LOOKING WELL.—We learn from one of our Vallejo farmers that the wheat crop

in this vicinity is looking quite well; the weather of late has favored the growing grain greatly. The heads are filling nicely. The result of the crop will be much greater than was anticipated several weeks ago.

SONOMA.

Flao, June 13: TWO GRAINS OF WHEAT.—Wm. T. Garrison has laid on our table two bunches of wheat from Mrs. D. W. Green's farm. Each bunch is the product of a single grain. One bunch contains thirty-nine and the other fifty-three large, well-filled heads.

Saxton Cook, informs us that the crops in the vicinity of Cloverdale will not be more than half the usual yield, and so it is throughout the county.

GOOD HAUL.—Elder Corbaley and some other parties drew a seine through the river near town last Saturday and secured about two barrels of fish at one haul. The fish found a ready market on the street.

STANISLAUS.

News, June 7: IMPROVED PROSPECTS.—The past two weeks of cool weather, added to the exhilarating showers we have been blessed with, have greatly improved the prospects of growing crops. Fields of grain sown as late as the 10th of March, and which three weeks since were given up as a failure, are now considered safe for an average yield. In fact the entire crop has been benefitted, by the better filling out and complete maturity of the grain. So far we have not heard of any shriveled grain in our valley the present year, and though the yield per acre may not be very large, we are assured the grain will be of the best quality.

TULARE.

Delta, June 13: SQUAW VALLEY.—Mr. D. E. Smith sends us the following from the above vicinity:

On Wild Hog Flat the farmers have begun to cut their grain, the yield being very rich. They are only afraid they will not be able to find a market for their barley.

Heading has commenced on Sand Creek in earnest. Everybody is busy. Two gentlemen from Paradise Valley, have been looking at land in Squaw Valley, and they are so well pleased that they have gone back for their families with the intention of settling there.

WEATHER.—In the past few days the weather has been so hot as to be the theme of general remark. In Mr. Blake's store last Saturday, the mercury got up to 104 deg. This, if you were away, would read frightfully, but there are atmospheric conditions which so modify the heat as to make it really quite temperate. The air is dry, though not unpleasantly so, and evaporation is very rapid. The nights are so cool as to require at least a blanket for covering.

OREGON.

Oregonian, June 8: The *Farmer* says it has heard of two or three instances in which large portions of fields of wheat and oats have been destroyed by a small worm, which does its work below the ground, and cuts off the stalk of the oats or wheat. The worms make a clean sweep of the crop as they go, leaving not a single thing in their way that they can destroy.

CHEESE FACTORY.—It is stated that an enterprising dairyman in California contemplates soon establishing in the vicinity of Portland, a cheese factory. There exists no reason why such an enterprise should not succeed here.

STOCK.—Two imported calves of fine blood and six fine English bred pigs were brought up on the *Ajax*. This stock is consigned to a farmer residing in Umpqua, about 35 miles from Oakland.

IMPROVED BREED.—A. M. McKeller left the East a few days since for San Francisco, with 30 head of pure Lincolnshire bucks. They will be brought by steamer to this State as soon as Mr. McKeller reaches San Francisco. These sheep are said to breed wools that are very desirable, and will be offered for sale on their arrival here.

FINE SHEEP.—A few weeks since we mentioned some very fine sheep that had been purchased in Canada and were on the road to this place. These sheep, we are glad to state, on the authority of Mr. Jas. Dewar, arrived at Wallula a few days ago, and may arrive in town to-day.

MONTANA.

Courier, June 6: THE WEATHER AND THE CROPS.—The late heavy rains that have fallen in the valley have been highly beneficial to the growing crops, and will relieve our farmers of the necessity of early irrigation this season. From all parts of the valley we hear cheering of brilliant prospects of abundant crops this year, and the ranchmen are about as nearly contented as it is possible for human beings to be.

McDonnell's Propeller.

The reward of \$100,000 offered by the State of New York for the most practical plan for propelling canal boats has called forth a large number of improvements, within the last year, upon the various plans and methods of propulsion.

Among the numberless devices suggested for accomplishing this purpose, the duck-foot propeller has been suggested as an economical method of applying power, and in imitation of the provision furnished by nature for the convenience of aquatic fowls. This propeller is made so as to open and close automatically by the resistance which it encounters in being moved back and forth in the water; thus, the direct stroke opens the buckets or wings so as to allow them to take full hold upon the water while the return stroke closes them so that they will slip through the water with little resistance.

This device is known as the McDonnell propeller and is shown in the accompanying engravings. The stem, A, in Fig. 1, extends through the stern of the boat passing through a suitable stuffing box to render it watertight. At the outer end of the stem is formed or fixed a large flat head or end, C, the enlargement of the stem being gradually made. Just back of the head, C, three or more buckets, B, are hinged so as to open in an outward direction in the form of an inverted umbrella; when a direct backward stroke is made the resistance of the water opens the buckets so that they take full hold upon the water; the reverse stroke closes the buckets so that they pass through the water with very little resistance. Fig. 1 shows the propeller at the time of the direct backward stroke, and Fig. 2 shows it when closed by the reverse action.

This one propeller at the stern would only be useful in driving the vessel forward, and in order to be enabled to back her it would be necessary to carry another one at the bow of the boat. This one the inventor proposes to entirely conceal by preparing a recess or cavity in the bow below the water line into which the propeller can be withdrawn and protected by a housing or covering when not in use.

The inventor proposes to apply this propeller to canal boats especially, as he claims that it will produce no perceptible agitation of the water, especially when it is given a downward slant while working.

The construction of the propeller does not require the alteration of the locks of a canal or any additional protection to the banks, nor alteration of the boats. In shallow water two paddles are used.

The inventor of this propeller is Mr. Thomas K. McDonnell, of this city, who has secured United States letters patent covering his invention through the SCIENTIFIC PRESS Patent Agency. For further particulars address Wiester & Co., No. 17 New Montgomery street.

Corals and Coral Islands.

"Corals and Coral Islands" is the title of a beautifully bound book of some 400 pages, by James D. Dana, Professor of Mineralogy and Geology in Yale College, and author of various scientific works, reports, etc. This work is profusely and most beautifully illustrated; and while the subject is one of much interest and importance we have an author fully competent to present it.

Prof. Dana is a man thoroughly versed in this and kindred subjects, a close observer and a writer of high literary taste. The facts which he presents were obtained by personal observations made as geologist, during the four years exploring expedition of Commodore Wilkes. Since making his official report he has further studied the subject of corals and coral polypi, collected other facts from later observers and brought a maturer judgment to bear upon the subject, whereby he has been enabled to throw much additional light upon the habits of these singular organisms, the important part they have acted in the economy of nature, and the wonderful assistance their remains have become to the geologist in his researches into changes which have taken place in the earth's crust during the immense geological periods in which they have lived and multiplied.

This work may be considered as a special contribution to popular science—to the dissemination of accurate and popular scientific information among the people. The Professor has therein, without any sacrifice of scientific precision, fairly entered the field as a missionary of science in the world work of converting the people to a proper appreciation of the great truths which God has written in the books of nature, and which should be as universally studied and understood as His other Book which has been handed down to us as his revelation to man. The author very properly observes in his opening chapter that "a singular degree of obscurity has possessed the popular mind with regard to the growth of corals and coral reefs, in consequence of the readiness with which speculations have been supplied and accepted in place of facts." It appears to be one of the objects of the present publication to disabuse the public mind of such errors, and to give, in a manner readily comprehensible by all, and made still more clear by numerous illustrations, a correct statement of all the facts connected with the subject.

The chapters on the structure of coral reefs and islands; their formation and the causes of their features; changes of level in the Pacific Ocean; geological conclusions, etc., are all valuable contributions to science, and especially worthy the attention of the general reader.

So interesting is the character and habits of the coral polypi, that we propose to give a short resume thereof from the pages before us

that if any new machine or improvement is required, it is only necessary to let the people know it and it will soon be provided, not only one but a hundred, thus proving the adage that "necessity is the mother of invention."

In many cases this mania only lasts until the patent is secured, as the reaction, if it does occur, is more likely to happen at that time than at any other; the crisis has passed. This is unfortunate, as then is the time when all of the mania of the inventor is most required. The energy necessary to successfully handle a patent is seldom possessed by the inventor, at least by the professional inventor. He gets up a good head of steam to begin with and successfully secures his idea, but his steam has all exhausted by this time and no further progress is ever made. (By substituting the word "money" for the word "steam" in the last sentence, the case will perhaps be more perfectly stated.) We therefore say to the patentee, keep up the mania; don't let it flag when you have secured your patent. Throw all of your energies into the business of introducing the invention. Don't allow yourself to ask a price for your patent which is twenty times more than it is worth, and more than you hope ever to sell it for. Be satisfied with a good, ordinary profit,

And is it at all surprising that the wines made from grapes grown in the long, hot and dry seasons of California, should yield from 15 to 20 per cent., when our critic shows us that European wines actually contain 17 per cent., which is but a half of one per cent. less than the average claimed for our wines in the original article to which exceptions are taken? If Europeans can make wines from grapes alone, containing 17 per cent. alcohol, then Californians can make wine yielding 20 per cent., and have done it, notwithstanding our remarks may be considered by our critic as "ignorant assertion."

If the word "heady," is displeasing, as applied to the effect of California wines, we are willing to substitute any other better word that will designate the effect produced by our too strong wines. We know from the experience of three summers' drinking of the wines of the Rhine, and other parts of Germany and France, that we found no difficulty in disposing of—we mean drinking, a full bottle of the ordinary

wines of those countries in one half hour, while discussing a dinner. We know equally well—for we have tried it—that to drink the same quantity of any good California wine under the same circumstances, makes us—call it "tight," if you please—we would say "heady," altogether beyond anything we ever felt from the light European wines.

We would be glad to see a bottle of California Claret a year old, with no more alcohol than is found in the Bordeaux clarets; and we would be equally glad to see an imitation of Rhine wines, so near to them in strength, that we can find it pleasant to drink a bottle with our dinner, without inconvenience or partial intoxication; and the great mass of those who would be the wine drinkers of the East would join with us in the desire; and if they could get it, would drink ten bottles to where they do one now of California wines.

We cannot agree with our critic that every interest on this coast has had to run the gauntlet of all kinds of "opposition" nor do we take to ourselves the imputation of being "interested in foreign wares," because we take the liberty to speak as we think on any subject coming under our notice.

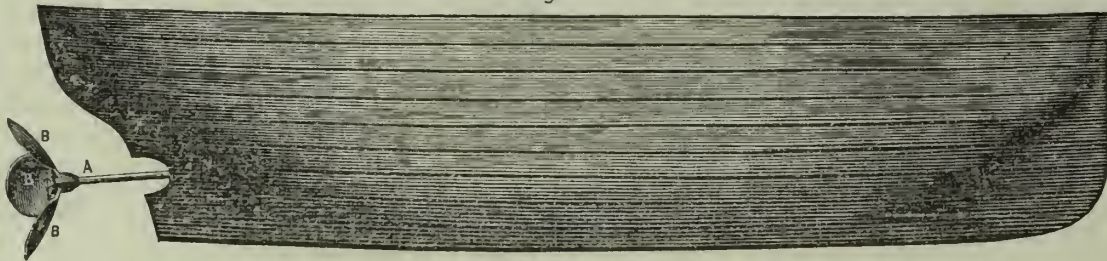
Care of the Teeth.

Rousseau said that no woman with fine teeth could be ugly. Any female mouth with a good set of teeth is kissable. The too early loss of the first teeth has an unfavorable influence upon the beauty and duration of the second. The youngest should accordingly be made to take care of them. All that is necessary is to brush them several times a day with a little ordinary soap or magnesia and water. After eating the particles of food should be carefully removed from the teeth by means of a tooth-pick of quill or wood, but never with metal. Camphorated and acid and tooth powders are injurious, both to enamel and the gums, and if employed, every particle should be removed from the gums by carefully rinsing. The habit which some ladies have of using a bit of lemon, though it may whiten the teeth and give a temporary firmness and color to the gums, is fatal to the enamel, as are all acids. No one, young or old, should turn their jaws into nut-crackers, and it is even dangerous for women to bite off, as they often do, the ends of the thread in sewing. It is not safe to bring very hot food or drink, especially if immediately followed by anything cold in contact with the teeth.

A REMEDY FOR COCKROACHES.—A correspondent of the *Alta* recommends pulverized borax as an effective agent for killing cockroaches. He said that it was tried with great success on the steamer "Kalorama," for shortly after being scattered, about a portion of the cabin, galley and engine-room, the cockroaches entirely disappeared.

TO REMOVE PROUD FLESH.—Pulverize loaf sugar very fine, and apply it to the part affected. This is a new and easy remedy, and it is said the removal is entirely without pain. It has been practiced in England for many years.

Fig. 1.



MCDONELL'S PROPELLER WITH BUCKETS EXPANDED.

as soon as we can prepare the engravings necessary to illustrate the subject. In the meantime we would refer our readers to the book itself which may be obtained of A. Roman & Co., the San Francisco publishers. Aside from its intrinsic merits, the book will be found an elegant ornament for the center table, and a most acceptable testimony of regard which one friend may wish to manifest for another, in the way of a present.

About Patents.

There seems to be an infatuation connected with invention which acts in somewhat the same manner that gaming affects the gambler. Some one has called it patent lunacy, and in fact it amounts to nothing less. It is the result of a constant and continued application of the thoughts and feelings upon a single subject

until it assumes its most captivating and tempting form. This feeling affects every inventor to a greater or less extent, and in a few cases amounts to a positive mania. Who has not at some time or other been compelled to listen to the laudation of some new style of churn, washing machine, or other invention, by an over-confident inventor.

Yet without this mania, this same over-confident feeling, our patent office would have little to do and our progress would in a measure stagnate. The primary cause of this mania is the liberal provisions which our lawmakers have established in favor of the inventor. The monopoly of any useful invention for the term of seventeen years, in competent hands, is almost invariably equivalent to a fortune, and it is therefore no wonder that we find a large proportion of our population ever on the alert to pick up or originate a new idea, or a useful machine, and when once the idea is seized upon, the mania alluded to is the engine that urges on the originator to complete and patent the result.

In foreign countries, where the laws are not so favorable to the inventor, the incentive to originate new ideas is not so great, and consequently we find that fewer patents are applied for.

It is a familiar remark in the United States

and you may be assured that when once you have it introduced and in public use your revenue from it will repay you for your ingenuity, and all of the time and money you have spent upon it, if the invention is in any way useful to the public.

Criticism.

EDITORS RURAL:—The article in PACIFIC RURAL, of June 1st, on Wines, is not correct, nor true in hardly any of the statements. 1st. No 15 or 20 per cent. alcohol is in any wines of the vintages of 1870 or 1871 in this valley, as per "Tralles" instruments, or as shown by distillation. I have in the past year made numerous tests in more than one cellar, and know of what I state; 11 per cent. was the highest, and 9½ lowest of dry wines. Sweet wines of course are not referred to by the "PRESS."

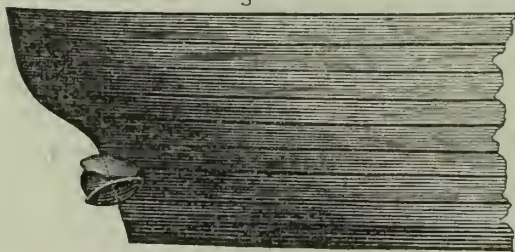
The word "heady," has been played on about long enough; there is no truth in the many assertions that Foreign Wines are as low as 7 per cent. I can show 60 tests of Foreign Wines from first-class authority above 11 per cent.; even as high as 17. But I won't enlarge on a subject where ignorant assertion is dealt in; for every interest on this coast has had to run the gauntlet of all kinds of opposition from persons interested in "Foreign Wares." I need not enlarge here.

St. Helena, Napa Co., June 4th, 1872.

C. BACKUS.

Articles appearing in the RURAL PRESS, either as editorial or communicated, will always be open to fair and respectful criticism; but is that the kind communicated in the above? Does our critic mean to say that because there was no wine in Napa Valley, of the vintages of 1870 or '71, that contained 15 or 20 per cent. alcohol, that therefore there was no wine made in California in those years that did? Can he answer for the wine of the hot and arid plains southeast of the City of Sacramento, from grapes that were allowed to remain upon the vines till they began to shrivel, and from which thousands of gallons of wine were made to yield from 15 to 20 per cent. of alcohol?

Fig. 2.



SHOWS THE BUCKETS CLOSED.

USEFUL INFORMATION.

How they Cut Veneers.

Many persons, doubtless, have wondered how these thin layers, or shavings, of mahogany or rosewood, are cut or sawed so thin, and yet so true as to thickness from those hard woods. And still more wonderful, how those very thin, hard wood paper hangings are made. And yet, wonderful as they appear, the mystery vanishes in a great measure when one sees the process, though it must still be admitted that it is a triumph of human skill and perseverance. How long it has been since veneers have been made and used, probably nobody knows; but the manufacture, like all other inventions, has progressed to perfection by degrees, through unwaried labor and improved mechanism.

Most approved process for cutting veneers, may be thus described:—The log to be shaved is cut into lengths of about ten feet. It is then split lengthwise, and the rounded side hewn or planed down, so as to make a face about six inches broad, perhaps. And as thus prepared, the piece is six inches in thickness. It is then soaked in warm water, several hours for the softer woods, and days perhaps for the harder kinds. When the shaving is to begin, the water is brought to the boiling point, and the stick taken out of boiling water, all hot and steaming. It is then taken to the machine and fastened to a cast-iron plate, horizontally, by screws. This plate is about a dozen feet long, by four broad, and stands vertically, the head of the stick being next the iron. The fastening is by screws, which pass through the plate and enter the wood about an inch. A dozen screws perhaps are put into a stick a foot broad. This plate moves up and down, with the stick fastened thus firmly, and horizontally, to its face. In front is a knife, fixed solidly, some ten feet long, sharp as a razor, and made like a chisel, with the bevel from the wood. This knife stands vertically, with the edge upward.

When the stick and knife come together, the former comes down and strikes the knife through its whole length; a shaving is pared off, and this, in thickness is just what the operator pleases; it may be thick as a veneer, say twenty-six or twenty-eight or thirty, more or less to the inch, as veneers are made; or it may be as thin as the paper hanging, which are 200 to 300 to the inch. The machine works automatically, the plate with the stick going up and down, while the knife moves forward at every elevation just enough to get in place to shave another veneer when the sticks descend. As fast as the veneers are shaved off they are taken by two men and laid in a pile. Ten or twelve are shaved off in a minute. Care of course is requisite, toward the close of the cutting, that the stick is not shaved so close that the ends of the screws are exposed and hit the knife. But as the screws only enter the wood just so far, somewhat less than an inch, the work is stopped before that point is reached. The removal of the piece from the plate, through which the screws passed, completes the operation. And this piece is a plank, or rather board, of about an inch in thickness, which may be cut up for other uses as the greater portion is not damaged by the holds. The veneers are as much finished upon one side as upon the other, and perfectly even in thickness. After being cut they are spread, to dry, being turned up edgewise to accomplish that end.—*Cabinet Maker.*

WHAT IS WATER?—Water is *rust*. The red powder that falls from iron which has long been subjected to the action of moisture, is rust of iron. It is the oxide of metal, and so is water. Water is the rust of hydrogenium, a true metal. This wonderful element no human eyes have ever looked upon, and probably never will, as in its free state it exists only in the form of an invisible gas. Quite recently science has demonstrated experimentally, what has long been suspected, that hydrogen gas is a metal, and capable of assuming a solid form in alloys. Oxygen, by uniting with this gaseous metal, rusts, oxidizes, or burns it, and water is the rust or ashes. This strange metal, hydrogenium, and its oxide, play an important part in all the operations of nature. It is not alone confined to the little ball of earth upon which we live, but it exists in the stellar worlds above us, and in those mighty points of light, the nebulae, which have so long puzzled and perplexed the astronomer and men versed in the physical sciences. The recent discoveries by means of the spectroscopic, have proved that this element enters largely into the unformed, chaotic masses of matter, moving in space, of which the worlds are made. It is ready, when the formative act is fully accomplished, of taking its place, in combination with oxygen, as water, to aid in the sustentation of animal and vegetable life upon spheres so far distant that our imagination even cannot reach them.—*Fireside Science.*

WHAT IS AN INDIAN CITIZEN?—A decision has been made by the Secretary of the Interior to the effect that Indians may and do become citizens by an abandonment of the tribal organization. The Ottawas and Chippewas have abandoned such organization and have become subject to the jurisdiction, to all intents and purposes, of the United States, and become citizens under the Fourteenth amendment. They are entitled to make homestead entries, and in every respect are subject to the rights and privileges of native born citizens. The Fourteenth amendment excluded "Indians not taxed," and the supreme court has decided that the tribal relation remains, Indians are not

taxable, which by implication means that when that relation ceases they may be taxed. Taxation and representation then go together, the Indian becomes merged in the mass of American population and one of it. This is one step further in the universality of rights under the American government.

The Weather Waste of Coal.

Dr. Varrentrapp has made this the subject of an investigation, and as a result states that the amount of loss suffered by coal from exposure to weather is considerable, far greater, indeed, than is generally known.

The results of his analysis show in some cases a total loss in weight of a specimen, from this cause, amounting to 33.08 per cent., while its deterioration in quality for purposes of fuel or gas-making reached a still higher figure.

This change consists in a slow combustion, in which the volatile constituents—which are most valuable combustible elements—are gradually eliminated, while the relative proportions of carbon, ash and sulphur are comparatively augmented.

It might be expected, now that the nature of this change is indicated, that anthracite (which has already gone through a very similar process in becoming what it is, by the loss of its bituminous matter) should suffer least of all coals from this action, and the result of analysis shows this to be the case. The density and compactness of this variety, aside from its chemical character, protect it in no inconsiderable degree.

The Cannel coals rank next in their power to resist deterioration from this source; while the bituminous varieties are the most susceptible.

The experiments of Dr. Varrentrapp are of such direct and practical importance that all who are engaged in the mining, transportation, storage or consumption of coal can study them with profit.

It appears, from accurate test of a number of samples before and after exposure, that all the valuable properties of the coal had deteriorated.

The cooking quality of the weathered coal diminishes with its gas-yielding quality, the author informing us that a sample of coal yielding, when freshly mined, a firm, coherent coke, after eleven days' exposure, yielding a coke of no coherence, and in all the samples tested the rule was absolute that the longer the coal had been exposed the greater was the inferiority in the quality of the coke it produced.

The gas-yielding quality decreased in one instance 45 per cent., and the heating power 47 per cent. while the same sample under cover lost in the same time but 24 per cent. for gas purposes, and 12 per cent. for fuel.

These experiments go far to explain the almost universal inferiority of the slack or waste coals in heating power when prepared for burning, even though some combustible material like pitch or tar is used in their cementation. It indicates, too, the imperative necessity of keeping coals amply protected from the deteriorating action of the air and moisture by keeping them constantly dry and under cover.

SOMETHING ABOUT WILLS.—Here are some rules governing the making out of wills, which may prove important if not interesting. A will cannot be made in language too simple or concise; it must be written in ink, on paper or parchment; and, if contained on one sheet, must be signed at the end by the testator, in the presence of two or more witnesses, and, if written on more than one sheet, the testator and witnesses had better sign each sheet. The witnesses must rigidly comply with every particular required by the attestation clause, at the end of which clause they must sign their names. A codicil to the will is to be made with the same regulations as the will itself, and may be written thus: This is a codicil to my last will and testament, bearing date the—day of—18—, and which I direct to be taken as part thereof. I give, devise, and bequeath, etc. As witness my hand this—day of—. Obliterations or alterations are dangerous, and when of necessity made, ought to be signed by the testator and witness. Marriage after making a will, renders the will void. It is not indispensable for a witness to know the contents of the will, which may be so folded as to prevent any other portion than the signature and attestation clauses being read.

HOW TO FASTEN RUBBER TO WOOD AND METAL. As rubber plates and rings are nowadays used almost exclusively for making connections between steam and other pipes and apparatus, much annoyance is often experienced by the impossibility or imperfection of an air-tight connection. This is obviated entirely by employing a cement which fastens alike well to the rubber and to the metal and wood. Such cement is prepared by a solution shellac in ammonia. This is best made by soaking pulverized gum shellac in ten times its weight of stroug ammonia, when a slimy mass is obtained, which in three or four weeks will become liquid without the use of hot water. This softens the rubber, and becomes, after volatilization of the ammonia, hard and impermeable to gases and fluids.

TO PROTECT WALKS FROM WEEDS.—Take one gallon of gas-tar and about a half a pound of air-slacked lime, boil and incorporate them well together and apply the mixture with a common long-handled whitewash brush. This will dry in a few hours if put boiling hot, and will kill off all young weeds and prevent their growth.

GOOD HEALTH.

Sea-Sickness.

The cause of sea-sickness, and the question of its curability, have both been the subject of a good deal of discussion. Some have asserted that it is always due to mere imagination or nervousness; but though this is undoubtedly a frequent cause of the malady, it is certain that it is not the invariable one. We have seen people sea-sick when the ship was moving mere smoothly and steadily than a railway car and it was easy to believe in that case that the expectation of the nausea was all that produced it. On the other hand, people who suppose themselves proof against an attack of the kind have been the victims of a sudden seizure. They neither feared nor anticipated anything of the kind, and it could not have been brought on by any mental cause whatever. Animals, moreover, are not exempt from sea-sickness. We have known a cat—not a "land-lubber" of a puss, but one of sea-going habits, that had crossed the Atlantic more than once—to be wretchedly sick in very rough weather; and we have heard of horses and dogs that were similarly affected. No one will assert that in these instances imagination had anything to do with the nausea.

Dr. Wollaston suggested, more than sixty years ago, that sea-sickness results from pressure of blood upon the brain; and it is well known that injury or pressure on the brain is almost invariably attended by vomiting, which is indeed its earliest symptom. Dr. Wollaston explains the way in which the pressure upon the brain is produced by the motion of a ship at sea, by reference to the action of mercury in the tube of a barometer. He says that "If a barometer be carried out to sea in a calm, the mercury will rest at the same height as when on shore; but when the ship falls by the subsidence of the waves, the mercury is seen apparently to rise in the tube which contains it." He considers that the action of the blood on the brain, at the moment of the descent of a ship is identical with that of the mercury in the barometer, and that there is an actual pressure, and even a blow, which, by frequent repetition, produces nausea and vomiting. The action in both cases is due to the inertia of the liquid, which tends to remain where it is, and not to follow the movement of that which contains it; in other words the mercury stays up when the barometer tube goes down. In like manner the blood tends to remain stationary when the head is carried downward, and the result is virtually the same as it would be if the blood were forced upward into the head. This produces an unnatural pressure upon the blood-vessels of the brain, and nausea and vomiting follow. This view is confirmed by the fact that the nausea is most marked when the ship is descending.

The sickness induced by waltzing is to be explained in a similar way. In this case, the blood is forced up into the brain by centrifugal force, just as liquid tends to rise in a vessel that is whirled around rapidly. Swinging also sometimes causes nausea. The only rational way of averting sea-sickness, is given as follows by Sir James Auderson:—

The first point is wholly to avoid the upright posture. Every one knows that it is a common practice to lie down, and this is done almost instinctively, but it is also known that to do so, though frequently successful, is not invariably so. The way in which the motion in a swing affects the brain affords the proper explanation why lying down is not invariably successful; and shows that it is necessary, not only to take a recumbent position, but to lie in the right direction. A person lying down with the feet towards the bows of a ship is, while it descends in pitching, in the same position as a person in a swing descending forwards, in which case we have seen that sickness is produced by blood being forced upon the brain. On the contrary, a person lying down with his head towards the bows is, during the descent of the ship, in the position of one descending backwards in a swing, in which case the pressure by the blood will be towards the feet, and, therefore, relief rather than an inconvenience will be experienced, the tendency being to reduce the natural supply of blood to the brain. It is necessary, not only to lie down, but to do so with the head to the bows; and it is highly desirable that this position should be assumed before the ship begins to move. There is a secondary advantage to be gained by closing the eyes, and so shutting out the confusion arising from the movement of surrounding objects.

CONSUMPTION.—An English physician has written a book to prove that "consumption always originates from the breathing of pre-breathed air;" and, though that may be putting it rather strongly, there can be no doubt that rebreathed air is one of the most fruitful sources of this and many other forms of disease.—Dr. Ronx says that the French, by daily using copper cooking utensils, take copper enough into the system to render its detection in the blood an easy matter.

SNAKES make sad work in India. Eight thousand persons die annually from snake-bites. In one province, nine hundred and thirty-nine cases are reported. Ammonia being freely administered, seven hundred and two cases were cured. In New Zealand the doctors find that a very much reduced quantity, introduced by injecting under the skin, is yet more successful.

How a Person May be Choked.

All that we eat or drink passes over the top of the windpipe, without a particle ever entering it, although the opening is larger than a dime, because the very act of swallowing draws over the open top of it a fleshy trap-door, which fits so closely that not even a particle of air can pass; but at the instant of swallowing, it opens up with a spring, and we go on breathing as if nothing had happened; but if we attempt to swallow anything too large, this trap-door being at the narrowest part of the passage, is kept closed, not a particle of air can enter the lungs, and we die in a moment of suffocation, as in drowning or smothering.

If you chew a piece of dried beef for some time, there will be a white remnant left which there is no inclination to swallow; if it be taken and picked apart, it will appear to be made of little strings, tough and strong; these were attached to the mere flesh-like parts, which were chewed and swallowed. If, in eating, a man has a sharp knife, and cuts his meat wholly in two, he may put two or three of those pieces in his mouth, and chew and swallow without danger; but if the knife is dull, does not divide the pieces wholly, two pieces may be tied together with one of these little strings, and while you have swallowed one part nearest the swallow, the other part may be near the teeth, and both held by the string, which holding the two parts together and hanging across the trap-door, prevents it opening, and death follows in an instant; hence the practical value of sharp knives at the dinner table.

A long hair in a mouthful of food may so entangle it in the act of swallowing as to cause a choking to death; this is what is meant by being "strangled by a hair." "String beans" may occasion a choking to death in the same way, if not carefully "stringing." Hence all food should be cut fine; should be taken into the mouth in small pieces, chewed thoroughly, swallowed deliberately.

Most readers have suffered considerable inconvenience from something "going the wrong way;" this is occasioned by a single drop of water, or atom of solid food, a crumb, or other thing slipping into the windpipe and falling down to the lungs, causing an instantaneous, spiteful, angry, dry cough; it is because nature was alarmed by an unnatural and unwelcome visitor, and takes this her only means of ejecting the intruder. If the particles are large or heavy, the surgeon must be called to cut open the windpipe and remove the substance.

A person cannot laugh or speak a word unless the top of the windpipe is uncovered; but if a laugh is provoked, or a word attempted to be spoken while in the act of swallowing, and just before the particle has fully passed the trap-door, it is raised a little, a drop or a crumb falls into it, and hence the mischief. Hence, in eating, do not attempt to speak until the "swallow" is clear.—*Hall's Journal of Health.*

How to Purify the Blood.

The stomach makes blood, and the lungs give life to the blood. If any individual has two gallons of blood in his body, and the food taken into the stomach makes one pint of blood in twenty-four hours, in sixteen days he would have new blood. The human body, consisting of bones, muscles, sinews, blood-vessels, organs of reproduction, nutrition, respiration, and of thought, etc., is constructed, nourished and sustained in accordance with certain laws common to organized beings. It is made up of the elements that surround us, such as animals, vegetables, and water. These substances, taken into the stomach, undergo the process of digestion, and the chyle, or nutritive portion, enters into the composition of the blood, and by this means is brought in contact with all parts of the system. Our bodies are always undergoing change, constantly wearing and wasting away, and constantly supplied and repaired by food, drink, and air; particles are displaced and thrown off, and new particles are deposited in their places, so that, by this gradual but constant exchange of particles, it is estimated that the soft parts of our bodies become entirely changed in the space of about one year, and our bones in seven years; hence, all the flesh of our bodies at the present time, will, in the course of one year, pass away, and, by the combination of new particles, its place will be supplied; and in seven years a like change will take place in bones, giving us entirely a different body from our present.

HEART DISEASE.—Those ladies who suffer from the distracting grievance and disability of being treated too much as drawing-room pets, and shielded too carefully from the rougher blows of the battle of life, may possibly learn resignation, if they cannot derive complete consolation from some dry but significant researches which Dr. Quain has made. Enlargement of the heart, one of the most distressing and fatal diseases, is more than twice as frequent in males as in females, the precise proportion being eight to three. This remarkable liability to the enlargement of men's hearts, as compared with those of women, is, he thinks, unquestionably due to the greater amount of work and anxiety which, in the present dispensation, falls upon men. Ladies may take this fact to heart, and reflect whether, in claiming the rights of women, they may not at the same time incur the risks of men, and with them a new and unexpected form of disability. They might do wisely to rest content for their sex, with hearts suffering, it may be, from those tender affections which often pain, but never kill.—*British Medical Journal.*



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY. W. B. EWER. G. H. STRONG. J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWER, A. M.
ASSOCIATE EDITOR.....J. N. HOAG, (Sacramento.)

OFFICE, No. 333 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, June 22, 1872.

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Graded Stock at the Fair.

Many persons who are engaged in raising thoroughbred cattle, sheep, goats or hogs for sale, content themselves with exhibiting only this stock at our agricultural fairs. This is a great mistake. To show the value of thoroughbred stock, they should show its crosses with common stock. We can not all raise thoroughbred cattle for instance, but if we have a herd of common cattle, and are engaged in raising steers for beef, and heifers for the dairy, we can increase the profits of our business very materially by breeding to thoroughbred Durham bulls. Half and three-quarter blooded steers at four years old, will on an average weigh from one to two hundred pounds more than common steers—and heifers of three years, will bring for dairy purposes, about double the price of cold-blooded heifers of the same age. It is to the interest of the thoroughbred stock breeder to show these facts, and there is no way he can do it so conclusively as to exhibit graded stock in connection with the thoroughbreds, at our fairs.

A flock of 5,000 sheep was driven through Calaveras county last week on the way to the mountain ranges. They are the precursors of about 100,000 sheep which are annually driven to the same pasture.

ON FILE.—"The Wild Flowers of San Joaquin Valley," "Notes from Napa Co.," by A. A. R. W.; "Silk Culture," "Sands of Kern Co.," "From Carmel Valley," E. B.; "From J. M."

It is estimated that China will be a market for American butter and cheese to the amount of 5,000 tons annually.

HARVESTING will continue late this year, there being very heavy crops to secure with but little extra help.

Editorial Notes Among the Farmers.

In the double capacity of editor and member of the Visiting Committee of the State Agricultural Society, we have commenced our annual rounds among the farmers, and as we go, we shall take notes for the benefit of the readers of the Press. Our associate and traveling companion is Col. Coleman Younger of Santa Clara, a member of the State Board of Agriculture. The Colonel being owner of one of the largest herds of thoroughbred Durham cattle in the State, and a good judge and ardent admirer of good stock of all kinds, the stock men may look for a visit from him at any time. If we venture any suggestions in these notes, in regard to stock matters, the stock owners will remember that they are given in the interest of the general industry and in the kindest of feelings and we hope they will be received in the same spirit. Representing as we do the general agricultural interests we shall speak freely of the practices of the farmers in the districts we travel through and hope our observations may be of some value to those directly interested as well as to the general reader.

Oroville and Vicinity.

On Tuesday, June 11th we left Sacramento by rail and arrived in Oroville the same evening. The Colonel having preceded us the day before, had taken time by the foretop and visited the farm of Joseph Glucauf previous to our arrival. This farm is situated in the forks of the Feather river and the Honcut creek, and contains fifteen hundred acres of as rich and valuable land as there is on the Honcut, where the land is famed for its almost unlimited fertility. The farm is generally level and is dotted over by groves of magnificent old spreading black oaks, covered with a luxuriant dark-green foliage hanging like the foliage of the weeping willow almost to the ground. Here and there is the bed of an ancient creek meandering through the place, and on either side are irregular rows of these same venerable and beautiful trees—spreading their arms over and furnishing grateful shade to the numerous bands of fine horses and herds of fat and beautiful cattle with which Mr. Glucauf's farm is well stocked. Mr. G. has some five hundred acres of wheat and barley which must yield from thirty to fifty bushels per acre, and almost ready for the reaper. He has also fifty acres of alfalfa growing most luxuriantly, and with its dark green foliage presents a most beautiful sight, and delightful contrast to the golden hues of the grain fields and lighter yellow of the wild oats pastures. Mr. G. is most favorably impressed with this grass and intends extending its cultivation.

Horticulture.

On the 12th, by invitation, we visited the place of James Birt, to see his horticultural operations. Mr. Birt has about one hundred and sixty acres lying within a mile of the town. Quite a large portion of this land is now rented to Chinamen for garden purposes, and pays an annual rental of \$20, and the Chinamen make money at that.

A portion of the place is cultivated by Mr. Leggate, and brother-in-law of Mr. Birt. On this portion we saw a most excellent vegetable garden in a most excellent state of cultivation. The vegetables too, were much more advanced than we anticipated. Tomatoes were full-grown, and just ready to color. Mr. L.'s mode of cultivating the tomato is, to trim all the leaves and branches off of the main stalk until about a foot high, and train each vine to a stake. The vines at this time are from four to five feet high, and all the branches are kept in close to the stake. The fruit under this mode of cultivation is exposed to the sun and ripens more rapidly, and the vines are said to be much more prolific. Mr. Birt has about five acres in various kinds of grapevines, and we have seen no place in the State where the grapes are so forward as in this vineyard. The Catawba are very nearly full-grown, and the Los Angeles are as large as large sized peas. We also ate here the red astrachan apple, fully ripe. It is Mr. Birt's intention to work nearly his whole place into table and raisin grapes, and we have seen no place in the State so favorable for such an enterprise.

Oranges and Lemons.

In the garden of Judge Sexton we saw orange and lemon trees loaded with fruit for the first time this year, while in the garden of Mr. Glucauf, in town, stands an orange tree, about twelve years old, that this year bore and ripened four hundred as fine oranges as we ever saw

grown in Los Angeles. They are of the same variety. A tree on Bidwell's Bar, some six miles above Oroville, this year bore fifteen hundred oranges, as good as any grown anywhere. These are significant facts, and tree horticulturists in this vicinity, and indeed all over the State, should benefit by them.

Vineyards and Wine.

Oroville is undoubtedly one of the most favorable localities in the foothills of the Sierras for the cultivation of the vine for wine purposes. T. Shaub, whose vineyard is some three miles above this place, and known as the White Rock vineyard has exhibited his wines at the State Fair a number of times and has in every instance carried off some of the first premiums. By a very little inquiry we were told the names of some thirty persons within a radius of three or four miles of town who are more or less engaged in the cultivation of the vine and who own in the aggregate some 400 acres of vineyards all or very nearly all bearing vines.

Vineyards do Not Pay

Notwithstanding the natural advantage of location, soil and climate, we are afraid that the cultivation of the grape and the making of wine has in every instance proved a pecuniary loss. A number who have made wines, bought casks to store them in, and who have devoted a considerable time and money to the enterprise are out the expense, and have no prospect of selling their wines to repay themselves. Upon inquiry as to the cause of their unfavorable state of affairs we learned.

1st. That each individual producer has at great expense undertaken, without any very definite or correct information of the business, to make wine of the few grapes raised on his place and in many instances these undertakings have proved failures, the grape juice becoming vinegar instead of wine, and even if good wine was the result, it cost more than it is worth.

2d. That the freight asked by the railroads to transport the wine to San Francisco or other markets is so high that the producer would have but little left, even could he sell at good prices, after paying these.

3d. On account of the government tax and unjust restrictions it will not pay to distill the wines or grapes into brandy.

Under such circumstances the wine-growers about Oroville, are about discouraged and some of them have commenced digging up their vines to make room for some crop that promises immediate and certain remuneration. Against such a course we would make a vigorous protest, and would advise all interested to join these interests so far as wine-making is concerned something on the plan of the cheese manufacturing establishments of some of the Middle and Eastern Atlantic States. Thus two difficulties will be overcome—expenses of production will be reduced, and a uniform quality of wine will be produced, adding value to the product. Having a large quantity of wine under a single ownership to be removed to market, better terms can be made with the railroads and it being of better quality, a better price can be secured for the same.

We would advise all wine-growers in this portion of the State to join the Wine Growers and Wine and Brandy Manufacturers Association, and attend its Fair to be held in connection with the State Fair this fall. At this meeting every phase of the wine interest in California will be fully discussed and some plan of action undoubtedly adopted to greatly improve the prospects and interests of this industry. We shall write of Chico and vicinity next week.

Cutting Back Grape Vines.

We have a correspondent, Mr. G. Backus, of Napa Valley, who practices cutting back the bearing shoots of the grape vine, in vineyard culture, leaving from two to four leaves only above the clusters. He further states that Dr. D. K. Rule tried the experiment on a block of 1,200 vines with, and without cutting back, and the result was one ton more weight in favor of the "cutting back."

It is somewhat remarkable that an experiment tried for the very purpose of ascertaining the difference in yield of the two methods should, after a careful weighing, resulted in a gain of an exact ton, not a pound more or less. He further remarks that he knows of no one there but what practices cutting back, we suppose to from two to four leaves, as practiced by him; and adds that he believes it is almost universal.

We would like to hear from grape growers in California on the subject. If a block of 1,200 vines—which is hardly thirty-five by thirty-five square, can be made to yield a ton more grapes by cutting back the bearing shoots to two and four leaves, it will pay to put it in practice in general vineyard culture; and if Dr. Rule can do it, others can, and the fact of its propriety and advantages ought to be generally disseminated.

The Los Angeles Star, in alluding to our article upon the fallacy of cutting back grape vines with a view of increasing their fruitfulness, as practiced by Mr. Backus, says: "If practiced anywhere it is a very foolish proceeding. We need scarcely say, such a practice is altogether unknown here."

Spare the Birds.

Will the citizens of Oakland permit the wanton destruction of the useful and beautiful songsters, that everywhere abound around their elegant suburban homes? We are informed that as many as 40 boys in a single day have visited Oakland, from San Francisco, with cages and traps to catch the linnets and yellow birds, that are the legitimate tenants of the beautiful oaks, that make Oakland the unequalled, natural and lovely park that it is.

These little birds, vocal, winged blossoms of the air among the trees, should be everywhere protected, instead of being ruthlessly and wantonly destroyed. Once caged, they are doomed to prison life, till death! Caught and sold for a dime! by cruel, thoughtless boys; whilst the only two crimes charged to their account are, one, the destruction of countless numbers of noxious insects that prey upon the fruits and floral beauties of the garden, and the other, that they pour out their sweet and gushing melody, free for all, upon the morning, noonday and evening air.

We understand there is an ordinance for their protection; if so, it should be at once and strictly enforced. Then, instead of the timid, frightened and hunted victim of a heartless cruelty, they would soon grow to be the confiding and cheery pets of every family of taste and refinement, for such would always show them kindness and give them their protection.

Fruits of the Season.

California stands head and shoulders over any other State of the union, in her wonderful varieties of early and late fruits, of temperate and semi-tropical growth. Our first strawberries, in quantity sufficient to call them a regular marketable commodity, purchasable any day at the fruit stands, were first seen about the 20th of March; in two and three weeks after, quite abundant, by the middle of April, not only abundant but cheap, and from that time to the present, no one who likes strawberries need to have gone without, and for a month longer they will enliven the fruit stands.

Cherries were never so finely gotten up by any other country or climate on earth, as evidenced by the size and flavor of the specimens, or rather quantities that are everywhere presented to tempt the eye and appetite. Raspberries and currants are unusually abundant and of excellent flavor. Apricots for the last two weeks have been a staple fruit, and the quantity on the market is every day increasing. Cherry plums, large and delicious, are to be had anywhere that fruit is sold.

Watermelons put in their first appearance on 4th street on Saturday the 15 inst., but whether delicious or not, we only know that they carried an odor of silver so pungent, as altogether to exceed that from our—strange to say, for once—pretty well lined portmonaie. And today, June 18th, ripe peaches and apples are to be had at several of the more prominent fruit corners. If there is any other country so richly endowed by Pomona as is California, with rare, early and delicious fruits, whilst apples of last year's growth in any quantity and excellent in quality are lying along side, we would like to hear of its precise locality, if we are never able to visit it; for we would like to know that the people of some other part of this beautiful earth, are as blessed and favored as we are.

The First Figs.

Three days since we saw the first ripe figs of the season, of the kind known as the green or white Ischia. Quality fair, but smaller than they need to be. Do our amateur fig growers generally know, or if knowing, practice a method common all over Europe where figs are grown, of increasing the size of the fruit just before ripening, by the application of a small quantity of oil to the flower end of the fig? "At Argenteil," says Loudon, the maturity of figs is hastened by putting a single drop of oil into the eye of each fruit. This is done by a woman, who has a vial of oil suspended from her waist, and a piece of hollow rye straw in her hand. This she dips into the oil, and afterwards into the eye of the fig."

"We have ourselves," says Downing, "frequently tried the experiment of touching the fig with the finger dipped in oil, and have always found the fruits so treated to ripen much more certainly and speedily, and swell to a larger size than those left untouched." Sweet or olive oil should be used.

Pasturing in the Sierras.

Throughout the entire length of the great Sacramento, San Joaquin and Tulare valleys, we hear of vast herds of animals already moving towards the Sierra Nevada, to graze upon the great plateaus and the countless little valleys that lie so cosily among the rolling ridges of the mountains. Every year this mountain pasturage is becoming more and more a feature of California, cattle husbandry.

Nor is it without its exceedingly interesting features; interesting and valuable beyond what has been accorded to it. For it is not simply that these alpine retreats, from the heat and dust of the lower valleys, furnish their grand quota of green and succulent summer herbage, when all is dry and drying up in the furnace-heated air of the lower world; but it is that the rest given to these lower plains and valleys, is just what is needed to continue them, the grand, autumn, winter and spring pasture grounds that they now are.

Very many of the natural grasses and weeds of the great plains are but annuals, that perfect their seeds in a single year. Whenever stock in large numbers are kept upon these lands the whole year or particularly through June and July, there is no chance for the grasses to perfect their seeds. The consequence is that almost total barrenness results, for none of the introduced or cultivated grasses are annuals, unless we include wild oats or some of the grain-producing plants. So that whilst the absence of stock from the low pasturage grounds during the summer months, perpetuates the existence of the annual grasses, it affords an opportunity for those grasses to recuperate in growth after the spring feeding, sufficient to produce an abundance of nutritious, though dried up food for animals throughout the autumn months.

An Inventor Going Eastward.

Mr. George Pardy, of this city, well known as a Mechanical Engineer and Draughtsman, and late Secretary of the Mechanics' Institute, has given up his practice as Engineer and Patent Solicitor, and gone to the Eastern States to introduce his patented system for detecting spurious holders of non-transferable admission tickets to various kinds of audiences and entertainments.

His system of making characters upon the face of tickets when sold, indicating the age, height, complexion, hair, whiskers, etc., of the purchaser, is a very simple one, and so conveniently efficient, that some \$5,000 or more was saved to the Mechanics' Institute of this city, by its use in one season. Over \$2,500 it is conceded, was saved by the use of Mr. Pardy's patent tickets at the last State Fair. Believing that its use in other States will be similarly useful, we hope Mr. Pardy will be successful in introducing his invention in the East.

We have received the following note from Mr. Pardy, just before leaving, on Monday last, with the request that we should state that his address, for the present, will be at Harrisburg, Pa.

SAN FRANCISCO, June 17th, 1872.

Messrs. Dewey & Co., Gentlemen:—I have to thank you for kindly consenting to adjust what Patent business may remain unfinished in my hands, at date of my departure for the East. I would also take this occasion to refer my late clients to your firm, as able and trustworthy solicitors, fully prepared to prosecute Patent applications, both here and in Europe.

Very truly yours, GEORGE PARDY.

Half Moon Bay.

We are in receipt of information from the vicinity of Half Moon Bay relative to the condition of crops in that section. Mr. G. W. T. Carter informs us that the potato crop which is in some seasons the principal one, is this year very light. Wheat is raised in quantity but little more than enough for home consumption, but what there is, is looking well.

Oats are the main crop, and give promise of an abundant yield. Barley is also a very sure crop and nearly ready for the harvest. In some places threshing has already commenced and not without its concomitant of accident. On the 13th, fire was communicated by a steam thrasher to about 20 acres of grain, which was destroyed, and had it not been for the railroad which stopped the progress of the fire, nothing could have prevented its spread over thousands of acres extending for miles.

As it was, the loss is estimated at \$1,400, the property of Mr. Pittman. Farmers are

getting shy of the use of steam threshers in that vicinity; and more than ever before are they convinced of the policy of becoming their own insurers, by interposing belts of green vegetation forty or fifty feet wide, as security against the sweeping fires that annually devastate thousands of acres of California grains, at or just before the period of their ripening.

The American Merinos at the International Exhibition of 1863.

Mr. George Campbell, of West Westminster, Vermont, took American Merino sheep to exhibit at the International Exhibition at Hamburg, in July, 1863. He found, as reported, one thousand seven hundred sheep on exhibition, three hundred and fifty of them were competing in the same class with his own. They were from the Austrian, Prussian and other States of Germany, and from France. Among the French sheep competing, were about sixty belonging to the Emperor Napoleon. Mr. Campbell was awarded the first prize of fifty thalers for the best ram; the second prize of twenty-five thalers for the second best ram, and the first prize of fifty thalers for the best ewes.

The following account of the proceedings at Hamburg, is given in the Practical Shepherd, on the authority, as it is understood, of the Commissioner from Vermont, Colonel Needham.

"The Committee of Award consisted of eighteen noblemen and gentlemen. The examinations were made by sub-committees,

lic with that hearty honesty which always marks the German national character, did ample justice to the Americans and the American sheep. Mr. Campbell sold his prize sheep, twelve in number, to a Prussian nobleman, for five thousand dollars. The highest priced foreign Merinos sold at the exhibition fetched but forty pounds, or two hundred dollars.

Sugar from Whey.

In conversation with Prof. Voelcker, the great chemist of the Royal Agricultural Society of England, among other subjects introduced was that of utilizing the whey of the large cheese factories of America. On being told that the principal use to which it was applied was the feeding of swine, he expressed surprise that no attempt had been made to extract the sugar it contains. He said that where as many as a thousand cows were kept together, or so near that the aggregate of the whey from that number of cows during the cheese making season could be easily collected, that a profitable utilization of the sugar of the same was entirely practicable.

The Prof. said that the whey from a thousand cows, would yield 800 pounds of sugar per day, which at ten cents per pound would amount to \$80 or \$2,400 a month. Repeated analysis of English milk, shows it to contain four and a half per cent. of sugar, or half as much weight as the butter and casein—the constituent of cheese—combined. That the extraction of the



MEPINO RAM—GEN. GRANT.

whose preliminary reports were subject to the revision of the general committee. The American sheep had encountered a certain degree of prejudice from their first arrival. The breeders of the old world, and particularly of Germany, seemed to think it audacious that Americans, who had so often imported sheep from Germany, should now enter the lists as competitors against them. And when a rumor began to gain ground that the sub-committee were disposed to award one, and then first two prizes to the American Merinos, it caused loud expressions of dissatisfaction, which were promptly re-echoed in the German newspapers. Notwithstanding, and in defiance of all this, the general committee, with many independence, ratified the action of the sub-committee by a unanimous vote. On the official promulgation of the decision, the previous censures took the form of accusations. It was asserted that the committee had been unduly influenced. Thereupon, Colonel Daniel Needham, Corresponding Secretary of the Vermont State Agricultural Society, who were present at the exhibition as the commissioner of the State of Vermont, after conferring with the United States Commissioners, Governor Wright, and Mr. Campbell, published a card in the German tongue, proposing a sweepstakes, open to all the previous competitors, the award to be made by a new committee, to be selected by the German Association, under whose auspices and direction the International Exhibition took place. Colonel Needham's proposal was, that each competitor pay an entrance fee of ten dollars, and if there were less than ten entries, he offered himself to make up the prize to one hundred dollars. The offer (substantially a challenge to a new trial) was posted and circulated among all the competitors. Mr. Campbell immediately entered his sheep, but his was the only entry! This rendered the triumph of the American Merinos absolute and undeniable; and the press and pub-

cream for butter and the casein or curd for cheese, does not lessen the quantity of sugar originally contained in the milk.

In Switzerland, milk sugar is made by allowing the whey to trickle down the sides of the mountains in wooden gutters or troughs. Threads are placed in the gutters, upon which the sugar adheres, as the watery portions pass off in evaporation. The simplicity of the process would indicate that there is no chemical difficulty in concentrating or evaporating the whey to the consistency of syrup or sugar.

It Should be Utilized.

Some effort it would seem, ought to be made with a view of extracting this sugar for commerce. The milk sugar of the London shops, is wholly imported into that city from Switzerland, and readily commands fifty cents a pound. It must be evident that the source of income from large dairies would be very much increased could some practical and inexpensive method be invented to take this article from the whey.

Whether evaporating pans and heat can be used profitably in securing this object, or whether our dry summer atmosphere with proper appliances for exposing large surfaces of the whey to its desiccating influences, may not be profitably utilized, are questions for investigation.

GOOD-BYE.—Mr. Howard Carleton for several years connected with this office, left for his home in Boston, last Tuesday. Mr. C. takes with him the best wishes of many friends for his future welfare and happiness.

LEAD PENCILS, now consumed in the United States exceeds 29,269,000 annually. Faber's celebrated factory has been burned.

IN Manila 25,000 women and girls work at cigar making, at average wages of seven cents per day.

Fine Wheat.

EDITORS RURAL PRESS.—I forward to you a sample of Egyptian or as it is sometimes called seven headed wheat, thinking it may add variety to your collection. Should better than it, be sent you from this county, of this variety, throw it away. The peas you sent me—the Little Gem—are very choice, and have been ripe for two weeks past. Early, rich, sweet and dwarf, all good qualities and they are good bearers. R. H. BARKWAY.

Binghamton, Solano Co.

The samples of wheat arrived in perfect condition, and we are inclined to think, will be hard to beat. The straw being perfectly formed, strong and bright, about five feet in height, which we consider better than if higher, and crowned with heads that are simply enormous, and containing sound full wheat from the base to the very tips of the heads. If this is a fair sample of the wheat of Batavia or Binghamton this year, we expect to hear large stories of enormous yields to the acre from that quarter.

We also received specimens of what appears to be, very late sown grain, the stalks four feet or more in height, but perfectly green, and with the longest unfilled heads, equally green, that we ever saw. We shall feel interested in hearing if the wheat from the field of which this is a sample, fills and is productive of a fair yield.

Trial of Mowers.

In answer to several inquiries on the subject, we remark that, we have seen in several papers notices of the trial of the Mowing Machines at San José recently, giving to some extent, the quality of the work performed by most or all of the different machines. We also saw that the decision of the judges had been deferred for a week or more; and to this day have not been able to see or hear of the decision. It is a matter of considerable interest, not only to the manufacturers of machines, but to the farmers of California generally; and we shall be pleased to give the result of the trial through the columns of the RURAL, whenever we receive it.

After the foregoing was in type, we received the following:

The judges appointed on the trial of Mowing Machines, reported as follows:

We, the undersigned judges, appointed to examine the work of the various Mowing Machines entered for the trial which took place at Col. Younger's farm on Saturday, May 25th, find that the nature of the growth of grass proved a severe test upon the machines, nearly all of which did very good work. Those failing most in quality of work, seemed to have suffered as much from poor management and inexperienced teams, as through faults of the machines. The work done by the "Woods," and the "Clipper," was superior to that done by the other machines, and everything considered, we find it impossible to make a distinction between the two.

J. W. HASKELL,
W. GALLIMORE,
C. T. SETTLE.

Sugar from Melons.

There has just been issued from the publishing house of Dewey & Co., San Francisco, a work on Indigenous Sugars; giving a history of the introduction and present condition of beet sugar manufacture in California; and full and complete directions for the manufacture of sugar from watermelons, canteloupes, etc.

The instructions are so complete, and the processes so easily performed when the directions are followed, that a boy of fifteen years can conduct every operation connected with the making of excellent molasses and sugar.

It is a pamphlet of about 60 pages. Single copies will be sent by mail, postage paid, on the receipt of 60 cents U. S. Currency.

Be particular to give correctly the name and Post-office address. Send to Dewey & Co., 338 Montgomery street, San Francisco.

THE PACIFIC SAW Co. publish an illustrated advertisement of mower and reaper sections, and their improved tooth cross-cut saw. We see no reason why all such articles that are largely used by our farmers, should not be made at home, giving employment to a greater number of mechanics here, who, in turn, must consume the products of our farms. Not a few of our farmers are already aware of the great reduction in the prices of reaper and mower sections during the past two years, and they may rest assured it is one of the most favorable results of the introduction of home manufacturers. We think this old established firm are worthy of the liberal patronage they now receive.



The Sewing Machine.

A strange vibration from the cottage window
My vagrant steps delayed,
And half abstracted, like an ancient Hindoo,
I paused beneath the shade.

What is, I said, this unremitted humming,
Louder than bees in spring?
As unto prayer the murmurous answer coming,
Shed from Sandalphon's wing.

Is this the sound of unimpeded labor,
That now usurpeth play?
Our harsher substitute for pipe and tabor,
Ghittum and virelay?

Or, is it yearning for a higher vision,
By spiritual hearing heard?
Nearer I drew, to listen with precision,
Detecting not a word.

Then, peering through the pane, as men of sin
Myself the while unseen, [do,
I marked a maiden seated by the window,
Sewing with a machine.

Her gentle foot propelled the tireless treadle,
Her gentle hand the seam;
My fancy said, it were a bliss to peddle
Those shirts, as in a dream!

Her lovely fingers lent to yoke and collar
Some imperceptible taste;
The rural swain, who buys it for a dollar,
By beauty is embraced.

O fairer aspect of the common mission!
Only the Poet sees
The true significance, the high position
Of such small things as these.

Not now doth toil, a brutal Boanerges,
Deform the maiden's hand;
Her implement its soft sonata merges
In songs of sea and land.

And thus the hum of the unspooling cotton,
Blent with her rhythmic tread,
Shall still be heard, when virelays are forgotten,
And troubadours are dead.

The Wives of Presidents.

Mrs. Washington, to whom fell the honor first, occupied the envied place for eight years, and her history is perhaps better known than any of her descendants. Biographers and historians, stimulated with a desire to secure her memory from the dust of years, have been indefatigable in their labors, and she is perhaps more highly extolled and more truly venerated than any of the many women who have succeeded her.

To Mrs. Adams properly belongs the highest place of honor in the American heart, because her position was more difficult; her duties more arduous, and because she was stronger mentally, and more thoroughly disciplined than any who have succeeded her. She became the occupant of a place held to be almost sacred because of its newness and the exalted character of both Washington and his wife. To succeed the former was a difficult task for her husband to perform; to occupy Mrs. Washington's place was an impossibility. But Mrs. Adams was gifted with great strength and courage, with rare powers of mind and heart, and was the best representative of the best type of American women of that whose life-history has been handed down to us.

Mrs. Jefferson had been dead nineteen years when her husband became President of the United States, and but for the occasional visits of his two married daughters, and the frequent presence of Mrs. Madison, the White House during the eight years of Thomas Jefferson's stay would have been entirely without a social history.

James Madison's wife was the most popular woman of her day, and had it not been for the unfortunate war of 1812, and the disturbed condition of the country both before and after this unfortunate event, her administration of lady of the White House would have been the most brilliant of any recorded in the annals of the social history of the country.

Mrs. Monroe was a timid, delicate woman, unfitted by nature and habit for the place she held, and at the expiration of her husband's term of office gladly retired with him to their Virginia home, where, in 1830 she died.

Mrs. John Quincy Adams was a Maryland woman who had been educated in

England, and who filled her semi-official position with dignity and honor.

Mrs. Jackson died of a broken heart before her husband succeeded to the Presidency.

Mrs. Van Buren had been dead seventeen years when her husband was elected Chief Magistrate, and her daughter-in-law, a lady of great refinement, was mistress of the White House during the term.

Mrs. Harrison was preparing to leave her western home when news of her husband's death reached her.

Mr. Tyler, who filled the unexpired term lost his wife during his stay in the White House, and subsequently married Miss Gardner, of New York, eight months before the close of his administration.

Mrs. James K. Polk, of Tennessee, was the second Southern lady, who as the wife of the President lived in the Executive mansion during the full term.

Mrs. Taylor heartily disliked the formality of Washington society, and retired to her Louisiana home immediately after her husband's death.

Mr. Fillmore, who served out Gen. Taylor's term, had a noble wife, and she and her daughter are remembered as two of the most cultivated, refined and attractive ladies ever in the White House.

Mrs. Pierce was always an invalid, and after the death of her only child, a young and promising boy, her health gave way entirely, and her position as hostess was a most undesirable one to her.

Miss Harriett Lane made her uncle's administration famous for its social attraction. She was one of the most beautiful of women, as well as one of the truest and kindest of nieces, and Mr. Buchanan was peculiarly fortunate in his social relations, though he lived and died a bachelor.

Mrs. Lincoln's career was checkered from the first, and the awful tragedy that closed her life at the White House secured for her the sympathy of the people.

Mrs. Patterson was the mistress of the White House during President Johnson's administration, her mother being a confirmed invalid. The family greatly endeared themselves to the people by their simplicity and refined, unassuming manners.

Mrs. Grant, the present occupant of the White House, leads a quiet, retired life, seems inclined to avoid all publicity, and spends most of her time in the society of her children and intimate relations.—*Laura C. Holloway*

Ben. Franklin's Testimony Against Beer.

Franklin was at one time employed in a printing office in London. The following statement appears in his autobiography:

"On my entrance, I worked at first as a pressman, conceiving that I had need of bodily exercise, to which I had been accustomed in America, where the printers work alternately as compositors and at the press. I drank nothing but water. The other workmen, to the number of fifty, were great drinkers of beer. I carried occasionally a large form of letters in each hand up and down stairs, while the rest employed both hands to carry one. They were surprised to see this, and many other examples, that the *American Aquatic*, as they used to call me, was stronger than those who drank porter. The beer-boy had sufficient employment the whole day in serving that house alone. My fellow-pressman drank every day a pint of beer before breakfast, one between breakfast and dinner, one at dinner, one again about six o'clock in the afternoon, and another after he had finished his day's work. The custom appeared to me abominable; but he had need, he said, of all this beer, in order to acquire strength to work.

"I endeavored to convince him that bodily strength furnished by beer could only be in proportion to the solid part of the barley dissolved in the water of which the beer was composed; that there was a larger portion of flour in a penny loaf; and that consequently if he ate his loaf and drank a pint of water with it, he would derive more strength from it than from a pint of beer. This reasoning, however, did not prevent him from drinking his accustomed quantity of beer, and paying every Saturday night a score of four or five shillings a week for this cursed beverage; an expense from which I was wholly exempt. Thus do these poor devils continue all their lives, in a state of voluntary wretchedness and poverty."

ROAD TO DRUNKENNESS.—It cannot be said that all smokers and chewers drink liquor, but all who drink, smoke and chew. Almost every drunkard began with tobacco. Keep your mouth clear of tobacco, and you lessen the danger of your fall by whiskey.

The Blind Canary.

A Chicago paper tells an interesting story of a canary that has now reached the age of twelve years, and is still as spirited a songster as he was ten years ago. What is more surprising in regard to this wee bit of melody is the fact that he has been stone blind for two years past, but still warbles his delicious music from his own "song book" with volume enough to compensate for their short comings.

The paper said when darkness first came upon the little fellow, he experienced much difficulty in locomotion, and was constantly coming in contact with the wires of the cage or with the perches thereof. "By degrees his birdship was taught caution, and is now perfectly surefooted. He moves about with a method wonderful to observe. On going from perch to perch, he climbs along the wires, at each step putting out the foot as carefully as the blind man his cane, and when he reaches the desired position, he tunes up with volubility as if in self-congratulation of his superior accomplishment.

"In walking on the floor of his cage, he uses the same precautions, and in his daily ablutions observes all the forms and customs in vogue among his more fortunate companions. In this performance it is noticeable, however, that he never forgets his infirmity, for he washes his head with the utmost care, always avoiding contact between his claws and any portion of the feathers in the vicinity of his sightless eyes. Such sagacity in a bird so fragile is really astonishing, and this little blind musician is the pride of his owner, the wonder of the neighborhood, and, we suppose, the envy of his feathered brethren."

Why Some People Remain Poor.

Cream is allowed to mold and spoil. Silver spoons are used to scrape kettles. The scrubbing-brush is left in the water. Bones are burned that would make soup. Nice-handled knives are thrown into hot water and spoiled.

Dish-cloths are thrown where mice can destroy them.

Tubs and barrels are left in the sun to dry and fall apart.

Clothes are left on the line to whip to pieces in the wind.

Pie-crust is left to sour, instead of making a few tarts for tea.

Vegetables are thrown away that would warm for breakfast.

Dried fruit is not taken care of in season, and becomes wormy.

Bits of meat are thrown out that would make hashed meat or hash.

The cork is left out of the molasses jug, and the flies take possession.

Pork spoils for the want of salt, and beef, because the brine wants scalding.

Coffee, tea, pepper and spices are left to stand open and lose their strength.

Potatoes in the cellar grow, and the sprouts are not removed until they become useless.

The bread is sifted in a wasteful manner, and the bread-pan left with the dough sticking to it.

Vinegar is drawn in a tin basin, and allowed to stand till both basin and vinegar are spoiled.

Cold puddings are considered good for nothing, when often they can be steamed for the next day.

Sleeping Flowers.

Almost all flowers sleep during the night. The marigold goes to bed with the sun, and with him rises weeping. Many plants are so sensitive that they close their leaves during the passage of a cloud. The dandelion opens at five or six in the morning, and shuts at nine in the evening. The goats-beard wakes at three in the morning, and shuts at five or six in the evening. The English daisy shuts up its blossom in the evening, and opens its "day's eye" to meet the early beams of the morning sun. The crocus, tulip, and many others, close their blossoms at different hours towards the evening. The ivy-leaved lettuce opens at eight in the morning, and closes forever at four in the afternoon. The night-flowering cereus turns night into day. It begins to expand its magnificent sweet-scented blossoms in the twilight; it is full-blown at midnight, and closes never to open again with the dawn of day. In a clover field not a leaf opens till after sunrise. Those plants which seem to be awake all night have been called "the bats and owls of the vegetable kingdom."

Don't wear tight shoes! have't you got sorrows and troubles enough in this world, without carrying a lot of bunions, corns and callouses on your feet.

Young Folks' Column.

Eyes and No Eyes.

You have all read the story in the school readers of two boys who went over the same route, one with his eyes open, and the other with them shut. It is old, but worth repeating and worth remembering every day; so many things worth knowing go on right under our eyes without being noticed.

I knew a man, I think I may have told you of before, a busy man, who had very little time for reading or study, but whose mind was a perfect storehouse of information on almost every subject.

"How does it happen that you know so much more than the rest of us?" I asked him, one day.

"O," said he, "I never had time to lay in a regular stock of learning, so I save all the bits that come in my way, and they count up in the course of a year."

That is just the thing—save the bits. "That boy," said a gentleman, "always seems to be on the lookout for something to see."

So he was; and while waiting in a newspaper office for a package, he learned, by using his eyes, how a mailing machine was operated. While he waited at the florist's, he saw the man setting a great box of cuttings, and learned, by the use of his eyes, what he never would have guessed, that slips rooted best in nearly pure sand.

"This is lapis lazuli," said the jeweller to his customer; "and this is chrysoprase."

And the wide-awake errand boy turned around from the door to take a sharp look, so that in the future he knew just how those two precious stones looked. In one day he learned of the barber what became of the hair clippings; of a carpenter how to drive a nail so as not to split the wood; of the shoemaker, how the different surfaces of fancy leather are made; of a locust, that his mouth was no use to him in singing; from a scrap of newspaper, where sponges were obtained; and from an old Irish woman, how to keep stovepipes from rusting. Only bits and fragments of knowledge, but all of them worth saving, and all helping to increase the stock in trade of the boy who meant to be a man. *The Little Corporal.*

The Flower Garden.

AN EXERCISE FOR FIVE LITTLE GIRLS.

SCENE.—Five little girls come out; form line; middle one holds small white banner hung with flowers.

FIRST GIRL.

I'm a blue violet, modest and meek,
Down in the lowlands my home I seek;
Down where the meadows are green and fair,
Sweet with the breath of the morning air.

SECOND GIRL.

I'm a pink daisy, and sweet I grow,
Out of the cold earth, under the snow;
Lifting my head with a smile I sing,
"O welcome thee back, thou beautiful spring."

THIRD GIRL.

I'm a sweet rosebud, just ready to bloom,
Filling the air with my rich perfume;
Dews in the morning, like stars in the sky,
Welcome, O welcome! for summer is nigh.

FOURTH GIRL.

I'm a sweet lily, with fairy bell,
Blooming alone in a quiet dell,
Where the brook warbles its silvery song,
Over and over, the whole day long.

ALL JOIN IN SINGING.

(Air.—"Rosalie, the Prairie Flower.")

We are little children,
Like the flowers that grow
By the silvery fountains,
Where they flow;
Like the buds and blossoms,
Smiling all the day,
We would be as sweet as they.
Pure as a lily, striving to be,
Seeking our Savior, happy are we;
Cheering all that see us,
And with winning way (all point up)
Pointing to the realms of day.

w. o. e.

A Puzzle—Of Places in Ohio.

The name of a celebrated French Emperor.

A precious stone.

A vessel for liquids and a weight.

A metal and the prevailing fashion.

A beauty and a spring.

A plume of feathers and a spring.

PROMPT REPLY.—"Why did Adam bite the apple?" said a schoolmaster to a country lad. "Because he had no knife," said the archer.

DOMESTIC ECONOMY.

Cooking and Health.

The *Health* always and very often the *Life*, especially of invalids and those who have weak and infirm stomachs, depend upon the care and skill of the cook. Our forefathers were so sensible of this that in days of yore no man of consequence thought of making a day's journey without taking his "*magister coquorum*" with him.

In order to acquire health, beauty, strength and spirits, we need nourishing food; and we will further say that we do not acquire those faculties or conditions of the mind and body, because our digestive apparatus gets out of order by reason of the indigestible nature of the food crowded into it. The greater part of the truly nutritive and digestible food is spoiled in the cooking, and so rendered unhealthy.

It is the business of the cook to know what is to be cooked and how to cook it—and to do this well it is not necessary to understand anatomy, chemistry, or botany, any more than it is necessary to study astronomy to ascertain why the bread comes out heavy, the roast baked to cinders or flabbily underdone. Vigilance and precision are the indispensable requisites of cooking well.

Recipes for *blanc mange*, custards, etc., and the endless and useless collection of puerile playthings for the palates, are scrupulously exact, even to a grain in the ingredient, while in substantial everything is done at random. For instance: a bit of this, a handful of that, a pinch of of t'other, do 'em over with an egg, and a sprinkle of salt, a dust of flour, a shake of pepper, a squeeze of lemon or a dash of vinegar, etc. Season it to the palate (meaning the cook's) in another way of expressing it. The palate may become dull by repeated tastings, and the best way to refresh it is to eat an apple or wash the mouth well in milk. The power of the nervous papillæ of the tongue becomes exhausted and therefore the cook should call in weight and measures so as to preserve the organ of taste for great occasions and new compositions.

It is true that a combination of certain colors is pleasing to the eye, while that of others is disagreeable; so an association of certain savors is pleasing to the taste and grateful to the stomach while others prove disagreeable and cause a revolt in the digestive apparatus; thus yellow and violet, green and rose produce an agreeable effect, but blue loses its shade when mixed with green; so sugar is miscible with sweet, sour or bitter food; but not with salt; a proper union should therefore be studied. It is likewise necessary to know that the organs of taste are distributed in different places in the mouth. *Piquant* food, for example, is felt principally on the sides of the tongue; cinnamon specially stimulates the end of the same member; the ardor of pepper is experienced about the middle of the tongue, and bitter substances affect the base, while spirituous substances seek the palate and the cheeks. The same may be said of substances sapid in the throat and others in the stomach.

Bearing these peculiarities in mind, the cook will be able to form combinations without being monotonous, and accommodate the most difficult taste.

Again, in order that the cook may encourage the machinery of mastication, food must not only be well cooked but put on the table in the neatest and most elegant manner. The good opinion of the eye is the first step towards awakening the appetite. Decoration is much more rationally employed in rendering a wholesome, nutritious dish inviting, than is the elaborate embellishments which are crowded about trifles such as custards, cakes, etc. How often do we see monumental pastry beautiful to the eye but no more digestive than a tombstone, of which it is strikingly suggestive. Better to behold a glorious leg of mutton or roast of beef surrounded with edible ornaments, the demolition of which gives joy to the stomach and recreation to the palate—unlike the disagreeable sensations experienced by devouring gypsum pastry fortifications.

Food to be eaten in perfection must be put into the mouth immediately after being cooked—anything *overdone* cannot be mended; but if a little *underdone*, the stewpan, gridiron or oven even will rectify the mistake. If *overdone* the best juices of meat are evaporated, and will serve merely to distend the stomach, and if the sensation of hunger be removed, it will be at the price of an indigestion. The chief business of cooking being to render food easy of digestion and to facilitate nutrition, the only way to accomplish it is by plain cookery in perfection—i. e. neither *over* nor *underdone*.

How often before dinner is announced and everything in apple-pie order, all becomes luke-warm, and to complete our mortification, the meat is put on a sheet of ice in the shape of a plate, which instantly converts the gravy into jelly, and the fat into a something which puzzles the teeth and the roof of the mouth as if we had bird lime to masticate, requiring the stomach of an ostrich or a clay enter to digest.

Unless you have prime provisions you cannot cook well. Be not therefore a *bargain hunter* and trot "around, around, around about" a market until trapped into buying some unchewable old poultry, tough mutton, stringy cow beef or stale fish at a very little loss than the price of prime and proper food. Many there are, however, who with *savings* like these tod-

dle home in triumph, cackling all the way like a goose that has got ankle deep into good luck. *Ohio Farmer.*

HOW TO MAKE HOE-CAKES.—A correspondent of the *Country Gentleman*—says the term "Hoe-Cakes" originated in Virginia, the cakes being baked by negroes on hoed in front of wood fires, the hoed supported by bricks. In Maryland and Rhode Island they are called johnny or journey cakes, and baked on the centre portion of a barrel head, wet previous to baking to prevent sticking to the board when turning the cakes; as common wood fires have become nearly obsolete, they may be baked by being enclosed within an oyster-broiling gridiron, set over fire coals on or outside a stove, avoiding smoke or blaze. For a single cake, three half pints yellow Indian meal, two eggs, salt to taste, half to a teaspoonful of yeast powder, and a handful of cracklings (refuse of rendered lard) boiled till soft. Lard will do about as well. Work and mix well and to the consistency of thick paste. Cakes half inch thick. Serve up on a warm dish, butter generously on the inside.

If any one should think the above is too "rough and ready," try the following: Pour over a quart of Indian meal boiling water, add some lard and a little salt, spread it over a board with a knife, tuck on the bottom of the board an iron hoop (ledge) and a handle behind the board to keep it in position.

CUCUMBER SALADS.—A lady correspondent of *Hearth and Home* says: "We have just prepared our winter's supply of cucumber salad, and this is how we made it: There were about a dozen ripe "White Spine" cucumbers lying on their vines, and these we picked, washed, pared, cut into strips, taking out the seeds, and then to each dozen cucumbers—which we cut up into pieces like small dice—we put twelve large white onions, chopped, six large green peppers, also chopped, one quarter pound each of black and white mustard seed, and a gill of celery seed. These were all mixed together, a teacup of salt added, and they were then hung in a cotton bag to drain twenty-four hours. Then the salad, with enough clear cold vinegar added to cover it, was put into stone jars and fastened nearly air tight. In six weeks it will be fit for use. It looks as well as it tastes, so white and crisp, and makes an elegant salad for a joint of cold meat. It is not like the Spanish salad, that requires 'a counsellor for salt, a miser for vinegar, a spendthrift for oil, and a madman to stir it up,' but it is quite as good in its way, and not very troublesome to make."

HOME-MADE YEAST.—Daisy Eyebright, in the *Country Gentleman*, recommends the following: "Boil two handfuls of hops, tied in a small bag, in six quarts of water; slice thin six large potatoes, and boil them with the hops; when they are soft, skin them out and mash perfectly fine; add to them one and a half pints of wheat flour stirred to a smooth batter with cold water; turn over the whole the boiling hop liquor, first taking out the bag and squeezing it dry; then hang it aside to use another time, for it will make two batches of yeast. Stir into this mixture two tablespoonfuls of sugar, one of ginger and one of salt. When milk-warm, add a teacupful of yeast, set in a warm place to rise, and it will be ready to put into a jug by the next morning. Keep in a cool cellar or ice-house, and it will last good for six weeks or more. Always shake the jug before using any of its contents. A teacupful of this yeast will make three loaves of bread and a pan of rolls. I shall surely try the recipes of Southern corn meal, which I always use in preference to the yellow meal."

ORANGES.—A writer in the *Boston Journal* gives an account of winter living in Florida, from which this is an extract:—"We get up in the morning and eat a few oranges, by way of preparing an appetite for breakfast. Mrs. M. and L. take theirs in their rooms; I take mine under the trees. After breakfast, which usually consists of fifteen dishes, more or less, oftener more, we go out for a walk. We usually begin under an orange tree; always end there. There are 30,000 of the trees, which accounts for it. At dinner we have oranges again. They constitute the sixth course, each having from one to thirty dishes. If they are not on the table we ask for them. We have never had to ask for them yet. They are both cooked and uncooked, skins both on and off. After dinner we eat oranges under the trees. I forgot all about lunch. One day I counted eighteen dishes and two negroes; we had oranges, and had them again in the afternoon."

GRAHAM BREAD.—There is but one way only to make Graham bread, viz:—Obtain first-class flour and make it precisely in the same manner as wheat bread, with bakers' yeast. It is the most natural and wholesome of all breads. Some people fancy that with the addition of soda, molasses, steaming, etc., it becomes more palatable. This is all bosh; for the manner in which it is generally made renders it by no means healthy or digestible, while *au contraire*, the simpler it is prepared the better, like all other food. I have used it according to the above plan for twenty years, only varying from the same when traveling, and then have been compelled, at hotels, to worry down trash, yelet Graham bread, made out of villainous compounds and prepared, no doubt, according to some of the "precious" recipes occasionally appearing in various newspapers. — *Moore's Rural.*

THE OLIVE.—There is no more wholesome or palatable oil for cooking than genuine sweet olive oil. It might well supercede in a great measure the use of butter and lard. In Italy and other parts of Europe, and especially in the East, it is used in cooking to the exclusion of almost everything else of this nature. The fruit, too, is coming into more general use in the different modes of pickling. The taste for olives is usually not a natural one, but when formed it becomes very decided, and the fruit is perhaps the most wholesome pickle that can be used.

EGG PLANTS, OR VEGETABLE EGGS.—Are used in their green state—that is, while the seeds are soft and white. They will do as soon as they are large enough; but economy suggests that they be full size before pulling. Pare off the outside rind, cut around in slices one-quarter of an inch in thickness. Have on a dish equal portions of salt and pepper, which must be rubbed with the fingers on to each side of the slices; then roll in flour and fry on a buttered griddle. When brown on both sides they will be soft and ready to eat while hot. They make a nice breakfast dish, and are a substitute for meat. — *Moore's Rural.*

TO CLEAN LAMP CHIMNEYS.—When you wish to clean a lamp chimney, hold a linen cloth against one end of the chimney and place the other end in your mouth; breathe in it until it is covered inside with moisture, push the cloth into the chimney with a smooth slender stick, and rub it around until the moisture is absorbed; repeat the process and breathe over the outer surface also; rub this with a cloth until dry, and you have a clean, bright chimney. Soft newspaper will take the place of a linen cloth. Do not use cotton cloth on any glass-ware.

TO BOIL EGGS.—Who does not know how? Yet how few people know the way to boil them in order to retain all their delicious flavor. Allow me to tell you my method:—I put one half dozen eggs into a tin pail, and pour about two quarts of boiling water over them; then set the pail on the hearth, where the heat is not kept up, and let them remain for six or ten minutes, according as we like them cooked, hard or rare. By so cooking the white is always tender and delicious. Try it.

Selected Recipes.

SALAD DRESSING.—Take the yolk of one fresh egg and mix with it two tablespoonfuls of olive oil very slowly, add one and one-half spoonfuls of mustard, three spoonfuls of salt, a little pepper, and last of all two spoonfuls of vinegar. Beat the white of the egg to a stiff froth, and lightly stir in.

APPLE FLOAT.—One pint of stewed apples; when cold sweeten and flavor to taste. Just as you want to send to table, and the beaten whites of four eggs, lightly stirred into it. With cream this makes a nice dessert.

Apples stewed for sauce should be pared, cored and put into cold water until they are ready to be cooked, to keep them from discoloring. Add a little water, putting them in a porcelain kettle or stew-pan. Cover them, and let them cook gently.

VERY FINE DOUGHNUTS.—Half a teacup of butter or lard, 1 teacup of sugar, 1 teacup of sweet milk, 4 eggs, 1 teaspoonful of extract of lemon, or allspice and cloves if preferred, salt-ratus and cream of tartar.

ENGLISH BUNS.—One pound of flour, $\frac{1}{2}$ pound of sugar, some cinnamon, $\frac{1}{2}$ pint of rising; rub them all together, and mix them with milk, four or five drops of pearlash. Wash them after they are baked with sugar and water.

SPANISH BUNS.—One and one-quarter pounds of flour, $\frac{1}{2}$ pound of butter, $\frac{1}{2}$ pound of sugar, 4 eggs, 1 glass of brandy, wine and rose water mixed, some currants and a $\frac{1}{4}$ pin of rising. Rub the flour, butter, sugar and cinnamon well together, then add the other ingredients, beat all well together, and stir in enough milk to make it a proper batter. Bake them in tins.

JELLY FROM GELATINE.—One ounce and a half of gelatine put over night into a pint of cold water, with the rinds and juice of three lemons. Next morning add a pint of boiling water, half a pint of sherry, the whites and shells of three eggs, and sweeten to your taste. Boil the whole ten minutes, and strain through a jelly-bag. This will make a quart of jelly. Be sure not to stir the mixture after it is placed on the fire. It is excellent.

MILK OR CREAM GRAVY.—One quart milk, 3 tablespoonfuls corn starch, made into a smooth batter with rich milk or cream. Boil the milk and pour in the batter, stirring all the while. Let it boil two or three minutes, remove from the fire, and stir in immediately a well-beaten egg. This dressing is used for baked potatoes.

EXCELLENT CRACKERS.—To fourteen cups of flour, add one cup of lard, two teaspoonfuls of soda, four of cream tartar. Rub the ingredients well into flour, then add three cups of water, work thoroughly and bake quick.

CEMENT FOR AQUARIUM.—The trouble with red lead and oil is that it is apt not always to adhere to the glass. Probably the best cement is that which consists of three parts of powdered pipe-clay, one part oxide of iron, and as much linseed varnish as is sufficient to make a stiff paste; or the so-called stone cement—nine parts of pipe-clay, one of litharge, and so much linseed oil as to be of the proper consistency. This becomes as hard as iron, and adheres with great tenacity to glass or almost any other substance.

MISCELLANEOUS.

The Agassiz Expedition.

Few scientific investigations of late years have attracted so much interest, as the one in which professor Agassiz is now engaged. Though there is perhaps little or nothing of pecuniary value expected to come out of the explorations in progress by this party, the sum of human knowledge will no doubt be largely increased by the facts which they will bring out from districts and depths, which have heretofore been enveloped in profound obscurity.

One of the questions which will be studied, will be the depth to which light penetrates the ocean. It has heretofore been held that the extent of penetration was very limited, and that the greater depths were in absolute darkness. Professor Agassiz believes differently, and will pursue the study with apparatus of the party's own invention.

The latest news from the expedition is under date of March 18th, from off Sandy Point, Patagonia.

Agassiz's glacial theory has already received final verification by the realization of his prediction, that in the Southern hemisphere there would be found traces of a glacial movement northward from the South Pole. He found near Mount Aymond erratic boulders polished, scratched, and grooved, all tending to prove the passage of a sheet of ice in a northward direction over this portion of the country. An important discovery was also made by Count Pourtales that many of the Patagonian mountains are extinct volcanoes, it having been hitherto claimed that none existed in the South American continent except on the line of the Andes.

Among the curiosities of science noted are immense quantities of kelp, or *macrocystis pyrifera*, the largest known alga, which grows about those coasts in from six to twenty fathoms of water in vast beds which warn the mariner to avoid the dangerous neighborhood. Its stems grow to be of immense length, having been estimated at from seven hundred to one thousand feet, thus probably constituting the most elongated of all organized beings, and dwarfing in comparison the redwood of California or the eucalyptus of Australia. One day in the open sea they passed patches of floating sea-weed with large sea lions lying on them, apparently navigating in that manner with much satisfaction.

The Professor expects to reach San Francisco in time to attend the National Convention of Scientists which meets in this city in August next, to which body he will make an official report of what he has seen and learned on the trip.

High Priced Horses.

Alluding to the very high priced fast horses we are buying in the United States, a New York letter writer charges the chief cause to the rivalry in the horse line between Bonner and Vanderbilt. They have contested the distinction of owning the fleetest animals in the world, and have been ready to bid against each other to any extent. Thus far Bonner has been successful and the reason probably is because the Commodore did not dream that any man had the nerve to distance his figures. In this he was mistaken, and his mistake cost him the envied pre-eminence. He did not know Bonner. The latter indeed has been a constant puzzle to the world, and proved himself in literature what Vanderbilt is in Wall street, though the Commodore can beat him swearing. Bonner has the finest stud of fast horses on record. We have known Mr. Bonner for about a quarter of a century. Until he began to buy fast horses we never knew him to speak of a horse or give more than a casual glance at one. Calling his attention to this fact one day, we asked him why he had so suddenly become deeply implicated in the matter of horses? "The truth is," said he, "it all came of a determination to beat Vanderbilt. I won't be beaten in anything or by anybody." That is the man all over. If it had been a contest about pianos or jack-knives, Bonner would have ransacked the world for the best instrument or the sharpest knives, and become an enthusiast both in the search and in the possession.

TEACHING CHILDREN.—Education does not commence with the alphabet. It begins with a mother's look; with a father's nod of approbation, or a sign of reproof; with a sister's gentle pressure of the hand, or a brother's noble act of forbearance; with a handful of flowers; in green dolls, on hills and daisy meadows; with bird's nests, admired but not touched; with creeping ants, and almost imperceptible emmet; with humming bees and glass bee-hives; with p'asant walks in shady lanes; and with thoughts directed in sweet and kindly tones to beauty; to acts of benevolence; to deeds of virtue, and to sense of all good; to God himself.

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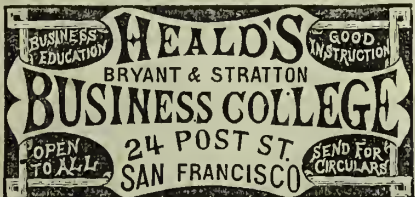
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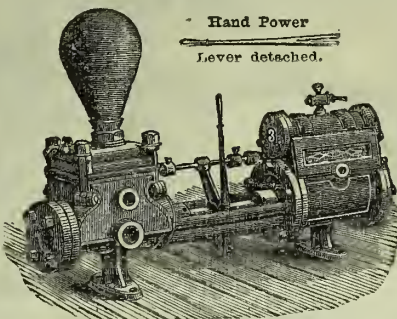
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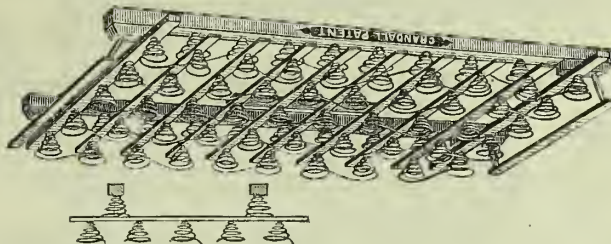
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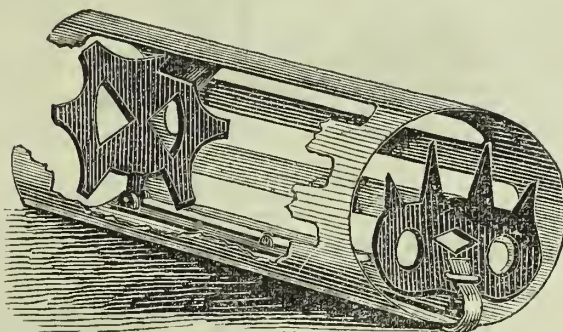
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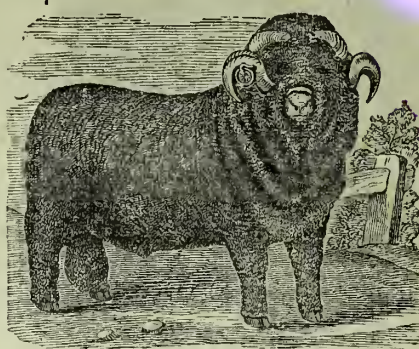
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Took the First Premium over all competitors at the State Fair, 1871. It furrows 14 in. deep and 24 wide.

This Gang Plow combines durability with cheapness, being made entirely of iron by experienced workmen, of the best material. Over three hundred are now in use, and all have given entire satisfaction.

Manufactured and for sale at Marysville by

HILL & KNAUGH,

And also by most leading Agricultural Dealers in the State. Send at once for Circulars, prices, etc. 21v3

MATTESON & WILLIAMSON'S



Took the Premium over all at the great Plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the Best and Most Desirable Gang Plow in the world. Send for circular to

MATTESON & WILLIAMSON,
Stockton, Cal.

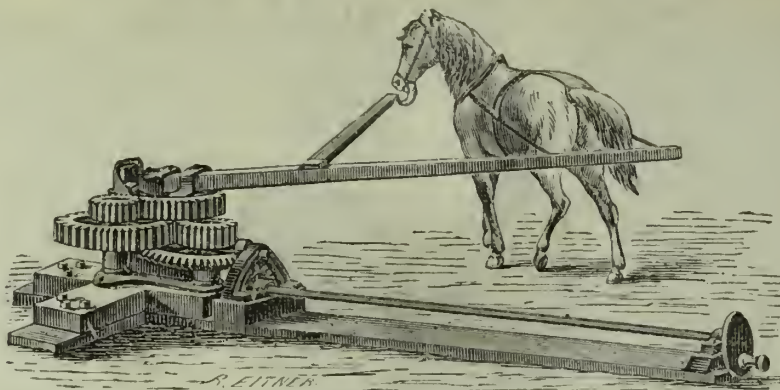
14v2-3m

San Francisco Wire Works,

NO. 665 MISSION STREET,

Near Third Street.....San Francisco.

C. H. GRUENHAGEN & CO.



ATWOOD & BODWELL,

MANUFACTURERS OF

EXCELSIOR AND GOLDEN STATE WIND MILLS,

Little Giant and Excelsior Horse Powers,

PUMPS AND WATER TANKS,

Nos. 211 and 213 Mission Street, SAN FRANCISCO.

We are the Largest Manufacturers of Pumping Machinery on the Pacific Coast.



N. B.—We have made the manufacture of Windmills a specialty the past ten years. During the last five years we have manufactured and put in operation a greater number of Mills than any other firm in the State; and we believe that in the last two or three years, more than any other two firms; which fact is the best proof in the world of the superiority of our machines. We GUARANTEE all our work, and we have NEVER FAILED TO FULFILL OUR GUARANTEES.

Windmills of all sizes, Horsepowers and Tanks, by W. I. TUSTIN,

Pioneer Windmill Manufacturer, Corner Market and Beale Streets.....SAN FRANCISCO.
sc16-1am3m

TUSTIN'S PATENT

FIRST PREMIUM WINDMILLS

ARE THE MOST POPULAR

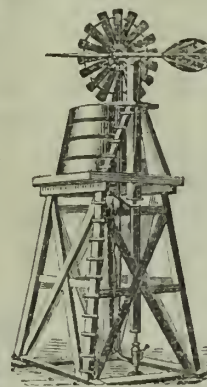
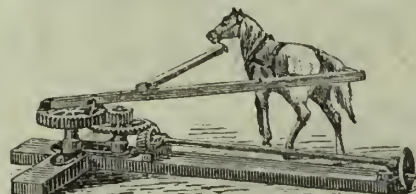
Of any on the Pacific Coast.

State and County Rights for sale.
Send for a Descriptive Circular containing Price List and all other particulars, postage free.

TUSTIN'S ECLIPSE HORSEPOWER



Eureka.



Economy.

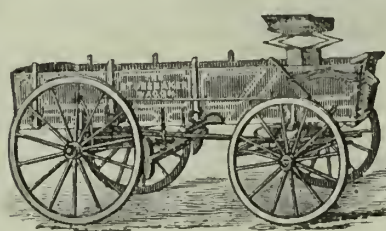
Is now the favorite of this State, and sells three to one of any other make.

MANUFACTORY, corner of Market and Beale streets.....SAN FRANCISCO.

W. I. TUSTIN, Inventor and Patentee,

And Pioneer Windmill Manufacturer of the Pacific Coast.

STUDEBAKER WAGONS



Have become

The Standard Wagons of the Pacific Coast.

For QUALITY, DURABILITY, LIGHT RUNNING, GOOD PROPORTION, AND EXCELLENT STYLE, They Have no Peer.

IRON AXLE, THIMBLE SKEIN, HEADER AND SPRING WAGONS, Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

Just the Kinds of Wagons Needed, As I make a SPECIALTY of the WAGON TRADE.

The attention of DEALERS is especially requested. Send for CIRCULAR and PRICE LIST.

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Factory and Depot, 217 and 219 K street, SACRAMENTO.

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California Tattersalls.

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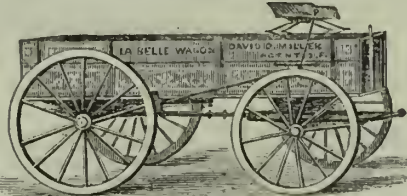
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SALE DAY—Saturday, 11 A. M. Farmers will find this institution invaluable for disposing of their fine stock.

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Thimble-Skein Farm Wagons.



JUST RECEIVED FROM

THE CELEBRATED ZUFELT & CO.,

Shchoygan Falls, Wis., established in 1850. Also the

Celebrated La Belle Wagon,

Manufactured by FARNSWORTH, WOODWARD & CO.,

At Fon du Lac, Wis.

PRICE LIST OF EITHER OF THE ABOVE NAMED WAGONS.

3 in Thimble Skein. \$120	3 in Running Gear. \$90
3 1/2 " " " 125	3 1/2 " " " 95
3 3/4 " " " 130	3 3/4 " " " 100
4 " " " 140	4 " " " 110

Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

DAVID D. MILLER'S,

IMPORTER AND MANUFACTURER,

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19v4-3m

Important to Stock-Growers.

I have EIGHT 2-year old full-blood (American Herd Book, registered) "Short-Horn" Durham Bulls, bred by one of the most famous breeders in Kentucky; also, 47 full-blood Cotswold Bucks and Ewes, with full pedigrees—all the above as good as can be found on either side the Atlantic—guaranteed. May be seen in the city. Will be sold at reasonable prices.

Office at the Morton House, Post street, San Francisco.
18v3tf PETER SAXE.

A New Firm.

JEWELL & FLINT, General Commission Merchants, and Sacramento Agents for Walter A. Wood's Harvesting Machines, No. 39 Front street, between J and K, Sacramento.

G. R. JEWELL, T. B. FLINT. 15v3-3m

"The Head of the Family."

NICHOLS, SHEPARD & CO.,

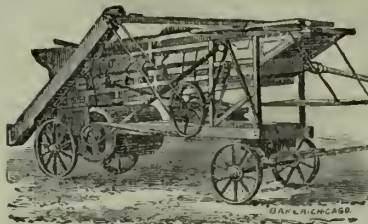
Grain-Saving, Time-Saving, Money-Making

"VIBRATOR" THRESHERS,

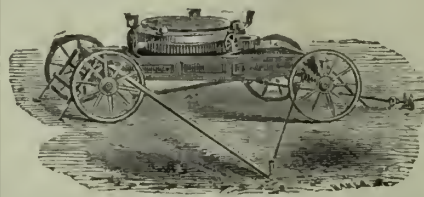
AND THEIR ELEGANT CONVERTIBLE

"Mounted" Horse Powers.

Office and Factory at Battle Creek, Michigan.



Recognized, in the trade and in the field, as the "leading thresher" of the period. FULLY ESTABLISHED through many years of successful use. ENDORSED by more than sixty thousand farmers and grain raisers who have employed and used them. In use in eighteen States and four Territories, with largely increasing demand and growing popularity. UNIVERALLY COME-MENDED as embodying the only true principle, and pronounced the "coming machine." PREEMINENT for saving grain, saving time, fast work, perfection of cleaning, adaptation to varying conditions of grain, convenience, ease of draft, and ease of management. PECULIARLY ADAPTED to handle Flax, Timothy, Alfalfa and other seeds, so difficult with others. In demand by grain raisers, at remunerative prices, while neighboring machines are idle. ATTRACTIVE in simplicity of parts, having only four belts and one set of gears. SPECIALLY NOTICEABLE for making no "litter," and requiring no "cleaning up" process after it. ASCERTAINED BY FARMERS to save them the cost of their threshing bills, by the increased saving of grain alone, over and above the best of others. OBTAINING the "pick" of jobs and extra prices for its work. UNRIVALEN in durability, handiness, ease of management, ease of draft, elegant finish, substantial construction.



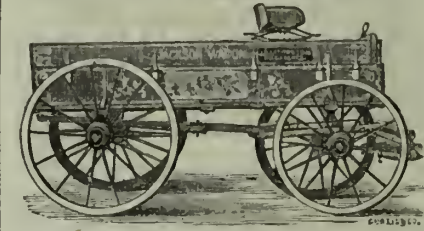
THE ELEGANT "MOUNTED" POWER—MOUNTED on four wheels, where it remains when in operation. ATTRACTIVE FEATURES: securely fastened with two stakes; levers, tumbling rods, etc., carried with it; the "angling" line shaft, by which all short links are avoided in "coupling up"; all boxes, journals, shafts and gears independent of the wood frame; gears "clutch" on; only one key used; convertible to different speeds, at trading cost, to match other machines; of the lightest draft, very durable, easily and cheaply repaired; sold separately, if desired, and speeded to match other separators or machinery.

ALL PERSONS who think of buying a new Thresher and want the "leading machine," and all farmers who raise grain and want it threshed, saved and cleaned to the best advantage, are cordially invited to send me their address, and receive (FREE) our Illustrated Pamphlet and Circular, containing a full description of these superior machines, with other valuable information.

JOHN NICHOLS,
285 K street, SACRAMENTO.

20v4-2m

Farm Wagons.



JACKSON MICHIGAN WAGONS are known to be the best FARM and TEAM WAGONS sold on the PACIFIC COAST. Send for Circulars. The

JACKSON WAGON

Received the FIRST PREMIUM, 1871, at the State Fair, Michigan, over the Studebaker and all others.

Important improvements have been made in our Wagons now arriving. Our large Two-horse and Four-horse Wagons have heavier tires, broader and deeper felloes, and extra iron braces, making them the

Best and Most Complete

FARM and TEAM WAGONS ever sold on this coast. We sell gearing only; or fitted up with California Racks and Brakes, Spring-Seat, etc., or with Eastern double side-box bodies. Persons ordering will get Wagons at SAME PRICES as if here—WARRANTED perfect and complete in every respect. Buying strictly for cash and in large quantities (twelve car loads on the way), we are enabled to sell, Wholesale or Retail, at very Low Prices.

N. B.—WARRANTED FOR THREE YEARS.

J. D. ARTHUR & SON.,

Corner California and Davis streets,
SAN FRANCISCO.

17v3eow3m

THE CELEBRATED

"H. H. H." Horse Medicine

Is truly a Scientific Preparation. Having adopted the RUBBER CORK, it can safely be kept for months without losing any of its healing properties.

No Farmer, Teamster, Liveryman or STOCK DEALER should be without it. It will remove Calous Lumps, Splints, Wind Galls and Spavins. Swells, Shift Joints and Contracted Leaders readily yield to its penetrating qualities. COLIC has lost its sting. The

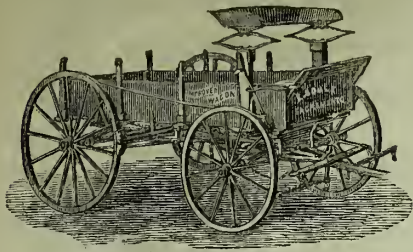
H. H. H.

Will Cure in Fifteen Minutes.

It is sold everywhere on the Coast.

WILLIAMS & MOORE, Proprietors

4v3-6m Stockton, Cal.



FIRST PREMIUM AWARDED at the State Fair of 1870; also First Premium at Mechanics' Fair, San Francisco, 1871; and Silver Medal and First Premium for best Farm Wagon, and First Premium for the best improved Thimble Skein at State Fair, 1871. Also State Fair GOLD MEDAL for 1871.

E. SOULE,

Corner Tenth and I streets,

ap22-3m

SACRAMENTO, CAL.

Patronize Home Industry—Buy California-Made Fruit Jars.

THE "VICTORY" FRUIT JAR
Is now on its third year of trial, and is found to be the most popular Jar ever introduced here. They are packed six dozen in a box, each box containing openers to enable the tops to be easily removed when the fruit is used. See circulars packed in the boxes for directions for putting up fruit.



For sale by Crockery Dealers generally throughout the city and interior.

JOHN TAYLOR & Co.,

Agents Pacific Glass Works, 512 and 514 Washington St
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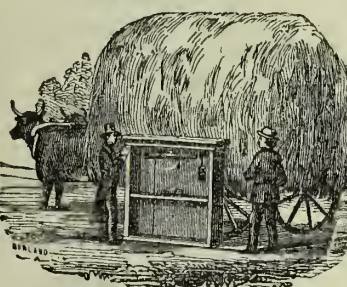
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HAY,

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Etc.



THE UNITED STATES
STANDARD.

6,000 to 40,000 Pounds Capacity.

THE SAME SCALE IS USED FOR WEIGHING
CATTLE, HOGS, ETC.

Scales of every kind. Address

FAIRBANKS & HUTCHINSON,
126 California street, San Francisco.

Agents for MILES' ALARM MONEY DRAWERS.
17v3-cowbp6m

Wanted, Agents!

\$100 to \$250 per month, everywhere, male and female, to introduce the Latest Improved, most Simple and perfect

Shuttle Sewing Machine

Ever invented. We challenge the world to compete with it. Price only \$18, and fully warranted for five years, making the Elastic Lock Stitch, alike on both sides. The same as all the high priced Shuttle machines. Also, the celebrated and latest improved

Common Sense Family Sewing Machine.

Price only \$15, and fully warranted for five years. These machines will Stitch, Hem, Fell, Tuck, Quilt, Cord, Bind, Braid and Embroider in a most superior manner, and are warranted to do all work that can be done on any high priced machine in the world. For Circulars and terms, address S. WYNKOOP & CO., 2054 Ridge Avenue, or P. O. Box 2726, Philadelphia, Pa.
22v3-3m

SAVE \$40! WHY PAY \$80?

THE IMPROVED

Home Shuttle Sewing Machine.

PRICE \$40.

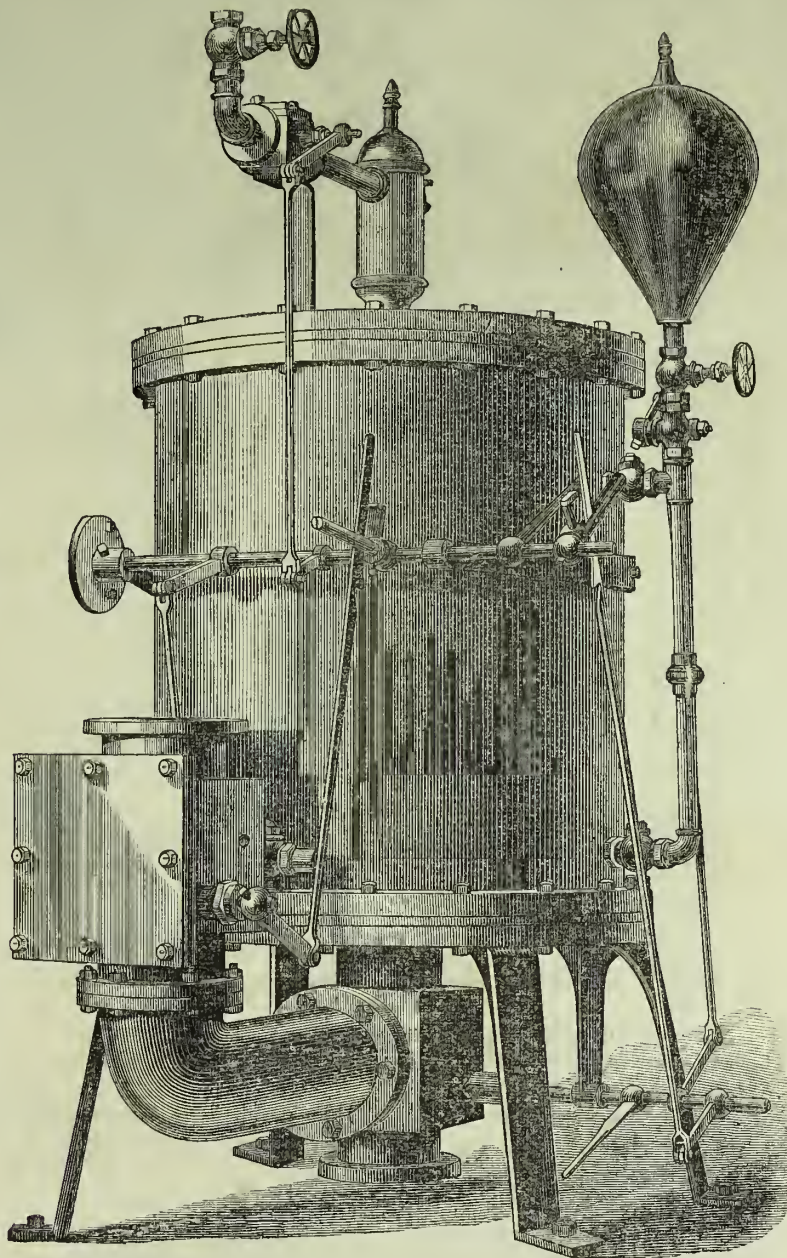
As a Family or Light Manufacturing Machine it has no superior—uses a straight needle and shuttle, and makes the Lock Stitch (alike on both sides). Send for a circular. Agents wanted in every town.

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SAN FRANCISCO.

PATENT AUTOMATIC STEAM VACUUM PUMP.

Patented May 17, 1870.



Manufactured by **HANSCOM & CO.,** Etna Iron Works,

SEND FOR CIRCULAR.

SAN FRANCISCO, CAL.

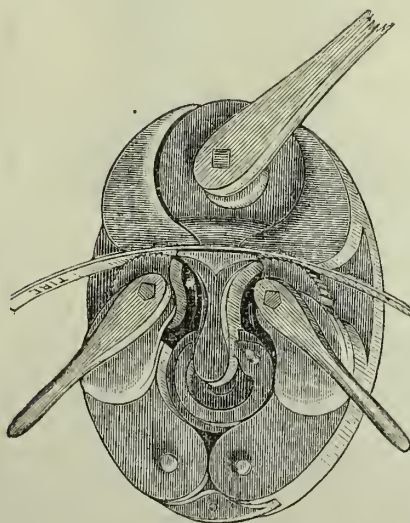
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Wheelwrights and Blacksmiths, Attention!

TIRE UPSETTER!

The Only Successful One Yet.

HUGHES' PATENT.



TIRE UPSETTER IN POSITION.

With this Machine two men can upset the heaviest Tire in a few seconds after the Tire is heated. The strength of a child is enough to operate it. There are no nuts, bolts, or screws about it to break.

PRICE \$50 GOLD COIN, delivered in San Francisco, ready for use or transportation. If the Machine is found not to do its work well, we will refund the price.

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Sole Proprietors and Agents for all the States and Territories west of the Rocky Mountains.

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21v3-bpsa

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CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.
15v23-3m **HELY & JEWELL, Agents.**

FINE STOCK FOR SALE.

Thirty Ewes and fifteen Rams pure Cotswold Sheep, selected from the best flocks in England.

Also ten Rams, and thirteen Ewes and Lambs, Shlesian Sheep.

Also five hundred Calves of the best milch stock in the State, from 3 to 5 months old in June; from one-half to full-blooded short-horn Durham. Calves to be taken away in June or July. Also full blooded and graded Angora Goats.

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1857.

SEEDS.

1872.

15 Years Established.

W. R. STRONG,

8 and 10 J street..... SACRAMENTO.

Garden,

Flower,

Field,

Fruit,

Tree and Shrub,

Grass and Clover Seeds,

Fresh, Pure and True to Name.

Seeds forwarded by mail to any part of the United States at 8 cents per pound.

My annual catalogue is ready and will be forwarded on application FREE.

ALFALFA.

50,000 pounds California Alfalfa, grown by J. Wilcoxson and others of the most careful and reliable producers.

Kentucky Blue Grass, Red Top Timothy, Red and White Clover, Mesquit or Gramina Grass, etc.

Seed Potatoes.

Early Rose, Bruze Prolific, Climax, Excelsior and other of the best tested varieties. An Eastern Agriculturist offers \$1,000 for a potato superior to the Excelsior in good qualities.

16v3-3m

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8 and 10 J Street, Sacramento.

200 Davis Street, corner of Sacramento.

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COMMISSION MERCHANT.

DEALER IN

All Kinds of Grain and Produce.



Has on hand large stocks of Wheat, Barley Oats, Corn, Bran, Flour, Middlings, Potatoes, etc.

SEED GRAINS, of all kinds, a specialty.

WHEAT—Choice Seed—Bay Coast, Australian, Chili, Sonora, and other varieties.

BARLEY—Coast and Bay, for Feed and Seed

BALD BARLEY—Superior Seed for Hog Feed or Hay.

OATS—Norway and other kinds, selected and clean.

CORN—White and Yellow, Eastern and California.

In daily receipt of consignments of Hay, Straw

Poultry, Eggs, Wool, Hides and Tallow.

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200 Davis street, N. E. corner Sacramento,

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THE OLD

Maple Leaf Nursery.

Has constant varieties of ORNAMENTAL TREES, SHRUBS, also a large assortment of Choice Green House Plants and Bulbs, and Flower Seeds of all kinds, are for sale by



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L. M. NEWSOM, Proprietor,

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1858.

J. M. MAXWELL
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HENRY K. CUMMINGS & CO.,

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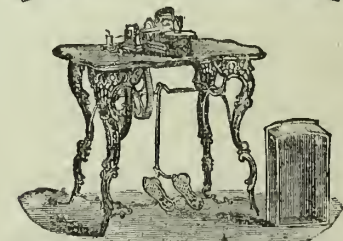
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FLORENCE



Will sew everything needed in a family, from the heaviest to the lightest fabric.

**IT DOES MORE WORK,
MORE KINDS OF WORK,
AND BETTER WORK,**

Than any other machine.

If there is a Florence Sewing Machine within one thousand miles of San Francisco not working well and giving entire satisfaction, if I am informed of it, it will be attended to without expense of any kind to the owner.

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19 New Montgomery Street,
Grand Hotel Building, San Francisco.

Send for Circulars and samples of the work. Active Agents wanted in every place.

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HOUSE AND SIGN.

Walls Whitened or Tinted.

E. H. GADSBY,

7v3-cowbp

585 Market street, San Francisco.

Thresher's Guide and Farmer's Friend—Just Published.

Written by D. Hollihan, a practical thresher for over fifteen years.
It contains facts and hints of great value to both threshers and farmers. A small book worth many times its cost to those specially interested, who thresh or employ threshers.

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The state of this new field of agriculture, so different from all others; the new and improved methods of farming necessary here; and the absence of any published record of farming and rural experience on this coast, form a combination of circumstances which render a really good journal of greater importance to farmers here than are similar issues to farmers in any other part of the world.

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This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

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Twelve First Premiums

At the Sacramento State Fair.

LIGHT BRAHMAS, Seven Different Strains;
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HOUDANS, direct from France;
LA FLECHE, direct from France;
SILVER SPANGLED HAMBURGERS,
(Said to lay 240 Eggs per year).

GOLDEN POLANDS, Non-Setters and Fine Layers;
SILVER POLANDS, Non-Setters and Fine Layers;
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BUFF COCHINS,
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HEATHWOOD GAMES, Finest in the World.

Also, Pigeons.

Pouters, Carriers, Nuns, Priests, Magpies, Ruffle-Necked, Black-Tailed Turbitts, Fantails; and Madagascar and Lop-Eared Rabbits.

PIGS.

China and Chester Whites; the Largest and Best bred in America.

Eggs and Fowls for Sale.

Apply to THOS. E. FINLEY, Manager,
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YARDS—Cor. Laguna and Washington streets.
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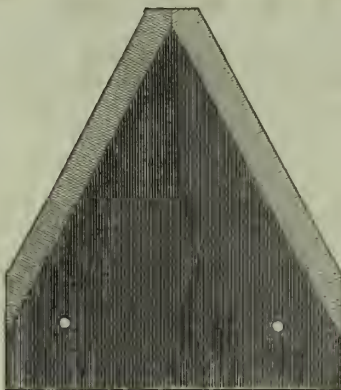
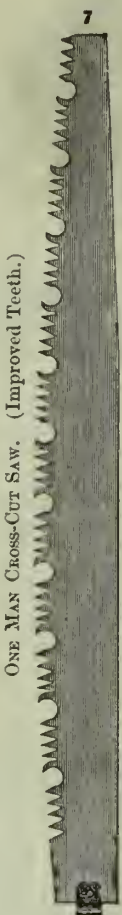
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Pacific Saw Manufacturing Co.

17 and 19 Fremont St., San Francisco.



Mowing and Reaping Sections.

These Mowing and Reaping Sections are made by ourselves to order for any of the different machines in use on this coast, and are warranted to do good work. We temper our sections, so as to leave them hard on cutting edge, and soft in center and back, thereby preventing them from breaking when being riveted.

A diagram, made by marking around an old section and through the rivet holes, will insure correctness. Orders should also state whether smooth bevel, or cut like a file, is required. Owners of machines who have not used our home manufactured Sections, will do well to try them at the first opportunity.

Saws of every Description

On hand and made to order. Repairing of all kinds done at short notice.

We would call especial attention to the Improved Tooth one-man Cross-Cut Saw, here represented. The satisfaction it gives is shown by its large and rapidly increasing sales.

THE EAGLE HAY PRESS.

Eagle Hay Press,

THE INVENTION OF J. A. MCGILLIVRAL, OF ILLINOIS, TO WHOM LETTERS PATENT WERE

ISSUED JANUARY 10TH, 1865,

AND JULY 24TH, 1866.

Several years were devoted by the patentee to the perfection of this powerful press, and its unprecedented sale in the East induces the proprietors to introduce it into California and the Pacific States.

All who have seen or used these Presses pronounce them superior to anything used heretofore. The power is applied by means of two levers, and it will be seen the power increases in ratio to the resistance; as the levers approach a horizontal position the power can scarcely be estimated. It is not only a powerful Press, but has the advantage of being Cheap, and also Simple, therefore not liable to get out of order.

Three men with one horse can bale from Ten to Fifteen Tons per Day, each bale weighing 250 to 300 lbs. It obviates all necessity by beating the hay before pressing. On account of its great power, it is well adapted for pressing Hydes, Rags, Wool or Cotton. When a bale is pressed and fastened, the follower runs down of its own weight, and the hales can be taken out on either side.

These Presses are now manufactured in San Francisco by the

Kimball Car and Carriage

MANUFACTURING COMPANY,

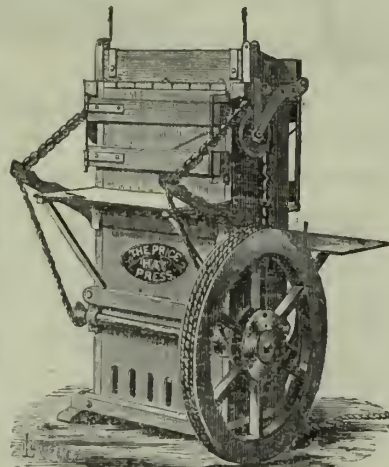
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18v3-3m

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In care of I. J. Truman, 17 Front St., San Francisco,
Or C. H. Hubbard, 9 J St., Sacramento.
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ALSO,

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For Sale at Wholesale or Retail by

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ALL GRADES.

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El Dorado, El Dorado county,
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25v24-1m



Volume III.]

SAN FRANCISCO, SATURDAY, JUNE 29, 1872.

[Number 26.]

Choice of Fruits.

Any fruit grower to get along in these days of competition and strife, and make money a little faster than his compeers, in the laudable pursuit of fruit production, must excel in that pursuit. To do this then, as a fruit grower, one desirous of setting out an orchard of valuable fruit trees, we would say—either go yourself to San Francisco—if that city is to be your market—once a fortnight at least during the whole fruit season, and there by ocular demonstration and comparison, ascertain which are the best and most valuable fruits on the markets at that particular time, and if he finds several kinds of apricots, peaches or plums, and all good, let him select out of these, the best, and make a note of them.

Select those that pound for pound bring the most money. Let him continue to do this steadily till the season is ended, and if he cannot do it personally, let him get some one, resident of the city to do it for him, and pay him for his time, and he will have obtained more information of a truly reliable and valuable character to him, in his desire to establish an orchard of the best fruits, than can be in any other way as cheaply obtained.

How to Procure Trees.

Then if you rely upon the nurseryman for your trees, insist that he shall furnish and warrant the varieties you order; and if beyond the ability of any one nurseryman to furnish just what you order, don't be duped by anything he may say about his ability to furnish you with kinds equal to, if not better than you order. You have started on the right plan to obtain the best succession of the best fruits, and let nothing swerve you from your purpose.

If you cannot find trees of the kinds you wish in the nursery, then have recourse to the trees actually producing the fruits you desire and obtain buds and grafts therefrom; for the time has already arrived in California, in which every honorable, high-minded cultivator of fruits is ready and willing to disseminate even his superior varieties. By following this plan or the principle involved in it, an orchard of fruit trees might be reared, producing fruits unequalled in point of quality, and as for sterling worth to the proprietor, without its equal in the State in proportion to its extent.

Wine Product of California.

Our wines have become a staple product, and are as certainly to be so in the future as wheat, corn or potatoes. This branch of the State's agriculture is even advancing more rapidly than any other, in proportion to the amount of capital invested. What the effect will be upon us as a people, morally, socially, or physically, we are not ready to divine for the future.

France as a wine-producing country, presents in her peasantry and yeomanry the most temperate people among civilized nations, but this may not be considered as a "point made," for they have always been so; at least history so affirms. What the effect of wine will be upon us, a people whose tastes have long been vitiated by the use of stronger alcoholic drinks than wines pure from the grape, time alone can determine.

We believe, however, that no greater evil certainly, but rather a lesser, will result from the general production and use of our native wines as a beverage, over the many vile alcoholic drinks now in use by the masses of our countrymen.

A California Primrose.

GEOTHERA WHITNEYI.

We give annexed an illustration of one of the most beautiful of the primrose family—a native of Humboldt County, and first brought to the attention of botanists in 1867. It was named *Whitneyi* for Prof. Whitney of the Geological Survey, it having been discovered by a member of the survey, (Prof. Bolander) while engaged in the prosecution of that work.

The plant grows to a height of twelve to eighteen inches, with oblong, lanceolate leaves. It throws up numerous stalks, with a profusion of blossoms of various shades of crimson, more or less dark, according to exposure to sun, fogs, or a clouded atmosphere; the best developed of



A CALIFORNIA PRIMROSE.

which measure fully four inches across. The from the old workings, prospecting, not developing any new ore bodies as yet. petals are heart-shaped, with apex downward, with dark crimson blotch about the center.

The accompanying illustration, which has been especially engraved for the Press, shows a full-sized flower, and also a reduced outline, exhibiting the habit of the plant. It grows on the low, hilly land in a dry light soil, and so far as we are informed, has not been noticed outside of Humboldt county.

The flower has a subdued, very delicate odor, much like that of the more fragrant varieties of the lily family. It would no doubt form a most beautiful and valuable addition to our cultivated flowers, and might undoubtedly be greatly improved and rendered double by careful cultivation. Even in its wild, natural condition, few annual plants exceed it in beauty. The seeds should be sown soon after the first rains, so that they may have an abundance of time to take deep root, to support them through the dry summers. They show blossom from May to September.

CROPS IN SOLANO.—A correspondent writes from Rio Vista as follows: The crops in this part of the county are tolerably good. Some late wheat that three weeks ago was thought to be drying up, is coming out finely and will turn out a good crop.

Wheat Crop.

It is now safe to predict that California is this year to furnish to the world an immense wheat crop of a superior quality. In the Atlantic States and Europe, the most critical period in the growth of the grain crop, is just before and at the ripening, and a still more critical one as determining the quality of the grain is the harvesting season.

We, with our harvest season of no rain, are already beyond the doubt that yet hangs over the season's prospects in other countries. In a few of the Eastern States the crop will be extremely light, even if the harvest proves propitious, on account of the thin stand of straw, consequent upon the severity of the past winter.

Fruit Commissions.

It is just as clear as daylight, that the commission merchants, who receive as middle-men' standing between the producer and consumer, make the largest share of the total profit on our annual fruit production. Immense quantities of fruit are yearly dumped into the bay, because consumers will not come forward and pay the exorbitant prices asked, over what the same quality can be bought for directly from the wagon of the producer, who is so fortunately situated that he can market his own fruit at retail.

The country is equal to the production of fruit in quantities that should place it within the reach of the poorest of the land in full abundance, at a cheap rate and still pay the producer a fair profit for his skill, time, land and labor. But so long as the middle-men can set their own prices on what they buy, as well as what they sell, so long will the profit of the producer be made secondary.

A quantity of fruit of any kind is thrown upon the market in the hands of the commission merchant at a fair profit to the producer; but the price is immediately put up to so high a figure, in anticipation of a large profit on sales, that nobody, or but a few that are able, buy. As a consequence the next consignment of fruit finds the former one on hand and no purchasers; of course down goes the price and profit to the producer and the first consignment goes into the bay.

The whole story is told in this—the retail prices of fruits in the city are too high for the good of the producer or consumer, whilst both would be benefitted if a more extended system of retailing from first hands could be inaugurated.

Cincinnati Industrial Exposition, 1872.

We have received a beautifully printed pamphlet of fifty-six pages, containing the list of officers, rules and premium list for the Third Cincinnati Industrial Exposition, which will open on the 4th of Sept. and continue—Sundays excepted—till Saturday evening, Oct. 5th. Five large buildings will give seven acres of covered exhibiting space. Many new features will be presented in the Fine Art, Natural History, and Horticultural Departments. Most liberal premiums are offered and in every respect it promises to be the most comprehensive and perfect Industrial Exposition ever attempted in the United States.

A Lecture for Horticulturists.

Dr. Wm. P. Gibbons, of Alameda, will lecture on "Scale Insects" before the Farming, Horticultural and Industrial Club, at Oakland, Friday evening, June 28th. These minute pests are more prevalent upon trees on this coast than is generally known. The Dr. has made a special study of the subject, which at present is one of importance. Mr. A. D. Pryall will deliver an essay on the life of the potato and the propagation of new species of the tuber. The public are invited.

BEETS LOOKING WELL.—The Sugar Beet crop belonging to the Sacramento Sugar Company looks splendidly, and the product will be very large per acre. They have one thousand acre in beets in the bottom lands of the American River, in the lower end of Brighton township, and are cultivating it closely. Brighton farmers inform us that the cultivation of sugar beets vastly improves the land.—*Folsom Telegraph*.

Wool Market.

We fear there is very little prospect of a rise in wools for some time to come. The next great periodical sale of wool in London takes place in a few days, and that will, as it always has, govern to a great extent the prices of wools in the American market.

The demand among manufacturers is not such as to give strength to the market beyond present prices, whilst the importation of foreign wool continues at a rate exceeding former years; add to this the reduction of duties on imported wools of every grade and we have no real grounds for expecting an advance much above present rates.

CORRESPONDENCE.

El Dorado County.

EDITORS OF RURAL PRESS:—Summer is full upon us. Several times during the last few days, the thermometer has been up to 90° F.—in the shade—yet the nights are cool and refreshing; the atmosphere being tempered by the cool east winds which come down from the snow-capped Sierras, commencing—usually—to blow, about 7 o'clock P. M.

Land—Stock-Raising, and Dairying.

Title to land is being obtained by pre-emptors, and homestead application, and from the Central Pacific Railroad Company, and our people are beginning to settle down and enjoy the realities of farm homes, in the middle and western portions of this county.

The eastern portion of the county high up in the Sierra, is used for grazing, and for dairying purposes during the summer season. Hundreds of cows and young cattle, pass daily, during the months of May and June, on their way to their mountain home where they will remain until October or November, when they will be driven back to the valleys of Sacramento and San Joaquin to winter.

The butter and cheese made by these mountain dairymen, around the cold springs which gush from the hillsides, and along the rivulets which flow from the melting snows, is most excellent, and commands high figures in the Carson or Virginia City markets, where most of it finds a ready sale during the summer.

Smiling and happy faces of father, mother, and children, and a jolly set of fellows—dairy-help—are found at these Alpino homes. Acquaintances from abroad and strangers are welcome guests, in the families of the dairymen when at their mountain homes. Your humble servant speaks from actual knowledge acquired on several occasions.

Fruits and Cereals.

Fruits of every kind, from present appearances will be abundant and excellent. At one time, some apprehension was felt that the peach crop had been destroyed by frost. But from observation I am of the opinion that there will be as large a crop this year, as there was last. From what I hear, the peach crop in the vicinity of Coloma, has suffered more from frost, than any other portion of the county. Apples, pears, plums, and all the small fruits, such as cherries, grapes, currants, etc., look excellent. A large amount of hay is being cut and haled, or stacked. Wheat, barley and oats never looked better, and more has been planted this year than in any one season in many years.

Grapes, Wine and Brandy.

Grapes last year were abundant, and in many vineyards most of the crop rotted under the vines. My crop was sold for twelve dollars per ton, delivered at the vineyard—it should have brought twenty dollars per ton. What the vine-growers need, is a few energetic men with capital, who will take at a fair price—say eighteen or twenty dollars per ton—all the grapes that are raised in this vicinity, and make them into a first-class wine and brandy, and establish a reputation for the same, in the Eastern States. To men of means, such a manufactory in this city, or vicinity, would in my judgment be profitable, and a great accommodation to the numerous small vine-growers here.

The amount of wine manufactured in this county last year I am unable to give. I am informed by A. J. Kennedy, U. S. Gauger of the 4th Revenue district, that there has been gauged by him 21,326 gallons of grape brandy in this—El Dorado—county, and 3,877 gallons in Amador county. Most of the brandy made by small vinters is purchased by San Francisco liquor dealers, or their agents, who happen to be around just at the time when the vine growers are hard-up—which is almost at any time—and offer \$1.25 to \$1.37 per gallon, and the vinters being in need of money to pay the tax, etc., of course take what they can get.

The brandy is shipped to San Francisco or Sacramento, diluted by adding water, rectified by being transferred from the original package to another package which is usually gauged and marked as holding

from one to two gallons more than can be contained in the package, with the proof reduced to about 42—or by the French scale—and sold to our country dealers as an excellent article of French brand, at from five to eight dollars per gallon.

The Central Pacific Railroad vs. San Francisco.

While the country people may not have much love for the C. P. R. Co., they certainly have but little sympathy for San Francisco, and would rather see the railroad company successful in purchasing Goat Island, and the building thereon, of depots, and warehouses, than otherwise.

The reason for this is, the country people generally, look upon San Franciscans as extortionists, seeking in every way, and by every means—lawfully—to lay tribute on them; such as enormous port charges, dockage, wharfage, etc., most of which directly or indirectly, comes out of their pockets.

Heretofore, if wholesome legislation has been proposed by the country members of the Legislature, a body at once was organized at San Francisco, with plenty of money, and sent to the Capitol to defeat any reform, which would be in the interest of the people outside of that city; and it was not until the railroad had made headway towards obtaining Goat Island, and the citizens of San Francisco became frightened—at about the close of the last Legislature—that any proposed reduction in port, or other city charges, were allowed to be considered or passed. A more liberal scale of prices heretofore, would have gained the good will and sympathy of the country people toward San Francisco. The above may seem like pretty strong talk—from a countryman—to the people of the "Huh" of the Pacific slope; but I assure you, Mr. Editor, that it is the sentiment of the grain-growers of the valleys, and of the foot hill country people generally.

County Agricultural Society.

At the annual meeting of the El Dorado County Agricultural Society, held the last week of May, G. G. Blanchard, Esq., of Placerville, was elected President, and G. D. Brook, of Diamond Springs, Secretary. The mines of this county are producing better; and a larger yield of gold is anticipated this year, than in any year since 1865.

Placerville, June 12th, 1872. E. N. S.

Some Plain Talk by a Country Gentleman.

EDS. PRESS:—I would recommend the members of the Oakland Farmers' Club to scratch their heads once more over (or under) those sycamores, possibly the "infusorial theory" will then fall from them. Why make mystery when nature makes none? How strange that the "infusoria" should light upon just such things as our old and well-known friend "Jack Frost" selects to play his vagaries upon, i. e. tomato and potato vines, etc. Possibly some of the O. F. C. are too scientific ("falsely so-called") to believe in "invisible agency;" although even so well-credited an invisible agent as "Jack Frost" can do more in one day than the united puny efforts of human agency could effect in a thousand years. But I suppose frost is nature, and we all believe in nature, even though we be scientific and unwilling to concede that one powerful invisible agency argues the possibility of a still more potent invisible agent. We plain folks in Monterey felt, no doubt, that our sycamores were cut down by the same frost that injured all semi-hardy vegetation. They are now putting forth fresh buds, but the former shoots are quite dried up.

The Mad Itch.

The reply of the veterinary surgeon of the United States Agricultural Department to the Santa Cruz farmers' communication was very unsatisfactory, and it is to be hoped that when that gentleman has time to refer to his books he will favor us all with further information. The hog already is a much maligned animal, particularly in the R. P., and now a further peccadillo is added to this long score. In this county it is a common practice for hogs and cows to run on the same grass and this is the first I have heard of any ill results arising therefrom. I, myself, have had cows and hogs feeding from the same corn fodder in the same corral, with no apparent detrimental effects.

It is easy to affirm that the hog is infested with parasites; doubtless diseased hogs are, as are scabby sheep; and that little innocent-looking "cotton-tail" rabbit is as much a breeder of tapeworm, I believe,

as the hog. But how do the hog parasites get into the cows' brains? Why don't they get into the hog's brains first, and give them "mad itch." Dickens, in "Great Expectations," tells a story of a convict, who, wishing to frighten a child into hinging him food, etc., threatens him that, should he be faithful to his charge, a "young man" will be sent after him, who will "creep and creep" till he tears out his liver. The hog parasites appear to possess the powers of this young man, and somehow "creep and creep" through bone and skin, (or through arterial and capillary vessels,—which is it Mr. Vet. Surgeon, please?) until they seize on the cow's brains, and mad itch supervenes. But joking aside, this is a most serious subject for farmers. All of us keep pigs and cows, and most of us keep them in close proximity, if not in actual contact, so please Mr. Vet. Surgeon, see if you cannot do a little more for us, and let us know what parasites, or ova, you found in the matter forwarded to you, and how it got there, and whether it belongs to all hogs, or only diseased hogs, and then, is it left on the grass in their saliva, or only in fecal matters.

ED. BERWICK.

Carmel Valley, June 12, 1872.

Napa County.

EDITORS RURAL PRESS:—The remarkable cool weather last week, has materially helped our wheat crops, which under its influence have headed out beyond anticipation. Wheat that was almost considered too short to cut for hay, will now be cut for grain with profit.

The corn in this section with but few exceptions, has made a very poor stand, owing to its not being planted deep enough, as well pulverized soil has dried to the depth of three or four inches, immediately after planting. What corn came up, however, looks well, though the stand is generally terribly uneven. Many farmers did not replant at all, thinking it useless; but those who had "the seed" to replant, are not sorry now, as it came up more quickly than the first planting—more evenly, and took remarkably strong. Beets seem to have missed as badly as the corn, replanting them, has, however, been a failure with me, owing to the unusual dryness of the surface. Vegetables of all kinds, have and are doing better this year than for the two preceding ones, as likewise small fruits, and everything planted in nursery.

The Almond Crop

May be considered almost a total failure, and I have my doubts as to whether almonds can be raised in Napa County with as large a profit as has been claimed for them; though I will admit that the frosts were unusually severe; still I am willing to await further developments in that line ere planting any more almond trees. On the other hand, the growth of wood is remarkable, and their certainty to live and thrive if planted with care and not in a morass, is absolute. The only question as to their being profitable is, whether the fruit that forms, can be retained till maturity. That almonds command a high price, is sufficient incentive to cause the planting of the trees, but if the high price is kept up on account of their persistence in casting their fruit immediately after it forms, the less we have to do with them, as far as profit is regarded, the better, though their rapid growth, retention of leaves in the fall, and easy and profuse blossoming in spring, will make them a favorite for the avenue or the house.

The Hay Crop

Is very fair, some acres sown and harrowed in to wild oats, turning off a ton and a half to the acre, and pretty clear of this. The volunteer is, however, not so good, being weedy and coarse. Land ploughed and harrowed, has not turned off as much hay as that simply harrowed in.

Cattle are unusually fat this spring, though very low in price, three-year old steers selling from sixteen to twenty dollars a piece. We however look for much better prices this fall, as soon as the surplus stock, thrown on the market from the loss of free pasturage, in consequence of the no fence law, shall have been bought up.

I read with interest Dr. Smith's letters on "Qualities desirable for Breeding," but got worsted on the following passage, which I am to ignorant to understand or the doctor has not clearly expressed, viz:

"It is a well admitted fact that the first or direct cross for a thoroughbred horse to an indifferent trotting mare, is far less likely to produce a trotting colt than a like cross from a pure-bred trotting stallion."

As our vineyards are mostly laid off and there is a slight lull between haying and cutting grain, now is the time to invest profitably in a

Little Boiled Oil,

And give the Monte Rose plow, double trees, single trees, cultivators, horse hoes, harrows, and in fact all the farm tools a coat of oil before honsing them for the summer, first screwing up all the loose bolts and repairing any damage the spring working have done them, so that in 73 there may be no delay. Harrow teeth should be taken out and sharpened, and laid away as the frame is then more easily painted, and also occupies less space in the tool house. Chains should be given a coat of oil also, clevises hung up, and everything put away carefully, so that at the proper moment every article needed on a well ordered farm, should be in its place, and ready at a moments notice for the performance of its duties.

The Peach Crop

Will be very light, though the fruit will be above the average, which helps to prove that if we culled our trees of nearly half their fruit as soon as it is formed, quality would more than compensate for quantity.

A. A. R. URRING.

Madronia Farm, Napa Co., June 17, 1872.

Lands of Kern County.

EDITORS PRESS:—I happened to call at your office recently; one of the editorial corps took occasion to enquire what the writor thought of the lands of Kern county. The following observations may be regarded as truthful, but not probably sufficiently elaborated:

1st. The great body of land lying north-west, and west of the foothills, under a correct system of agricultural treatment, are of an excellent quality. The fruits, cereals and grasses may be propagated suffering no disparagement with any other portion of the fertile State of California. As a proof of the writer's appreciation of the suitability of the lands in the neighborhood of Bakersfield, for raising cotton, the writer as chairman of a committee appointed by the California Cotton-Growers' and Manufacturers' Association, reported favorably of the lands in question, 10,000 acres of which were in consequence purchased by the Association for the purposes of the company.

2d. During the visit of the writor to the village of Bakersfield, he took occasion to visit the surrounding territory within a radius of some 20 miles, and decided that, from the evidences of success exhibited at several localities in raising pears, apples, figs, grapes, wheat, barley, alfalfa and other grasses, no doubt need be entertained by any one desiring to settle or ranch in the Kern Island region, of making agricultural, horticultural, cattle or sheep farming, a success beyond question.

3d. Large sheep and cattle ranches are spread over the southwestern and north-eastern portions of the County of Kern.

4th. Considerable advantage arises from the fact of an abundant supply of water, being always available from the Kern River, both for purposes of irrigation, and for the necessities of stock. Artesian wells are also bored with less difficulty than in many other localities, as the substrata is earthy for from sixty to one hundred feet in the Valley of Kern Island.

JAMES D. JOHNSTON.

MR. SAN BERNARDINO.—The *Guardian* published an account of the ascent of this famous mountain by W. A. Goodyear, of the State Geological Survey, one day recently. It took half a day to ascend from the base of the mountain, a distance of six miles. He was accompanied by Mr. Frank Thomas as guide. They remained on top of the mountain about three hours. The height of the mountain was estimated at 11,000 feet, and it was extremely cold on the summit, the thermometer indicating 32°. The gulches toward the top were filled with snow, supposed to be 20 feet deep. An adjoining peak was pronounced 800 feet higher.

THE culminating point of the Montenis Pass, built by order of Napoleon I., reaches an elevation of 6,775 feet above the level of the sea.

MECHANICAL & SCIENTIFIC.

Dr. Carpenter's Theory of Ocean Currents.

Dr. W. B. Carpenter presents in the *Popular Science Review* a very interesting resume of the results of his deep-sea investigations. In his first expedition to the deep channel between the Shetland and Faroe Islands, at the depth of 600 fathoms in one place the self-registering thermometer indicated a temperature of 45 to 48 degrees Fahr; while at another part of the channel, only twenty miles away, a temperature of 32 degrees at the bottom was recorded—a very marked and curious contrast. The next year most remarkable contrasts of bottom temperature were shown at different depths on the southern slope of the same channel. At a depth of 190 fathoms, the temperature was 48 degrees, while only eight miles north where the depth increased to 445 fathoms, the thermometer sank to 30 deg.—thus showing a difference of deep-sea temperature of 20 degrees within that short descent of only 225 fathoms in depth. At both places the surface temperature was 52 degrees. Further where the surface temperature was between 49 and 50 degrees, serial soundings indicated at 350 fathoms a temperature of 32 degrees, that of freezing water; and from that point to the bottom, 640 fathoms a river of glacial water was found, below the freezing point of fresh water.

In one of his more recent expeditions off the coast of Spain and Portugal, where the surface temperature of the water was as high as 65 degrees, serial soundings indicated a loss of only 10 degrees for the first 100 fathoms; which, therefore, may be termed the superheated surface, under the powerful rays of a midsummer sun. Then, down to 300 fathoms, the temperature lowered very slowly only to 49 fathoms, showing a warm stratum of water. But in the next 200 fathoms there was a descent to 40 degrees; and from this level of 1,000 fathoms to the bottom, at 2,435 fathoms or nearly 3 miles—a depth about equal to the height of Mt. Blanc—the temperature steadily lowered to 36.5 degrees and still lower results were obtained near the equator. Here then was a lower stratum of very cold cold water of no less than 1,400 fathoms in thickness. Commander Chinné found close to the Equator, 3 degrees S. latitude, a bottom temperature at 1,800 fathoms of 35 degrees, and at 2,306 fathoms one of 33.6 degrees.

Whence comes this deep layer of nearly freezing water, and how does it retain its low temperature? As the water above it and the earth below it are warmer, it could not long retain its temperature if stationary, unless continually supplied from some constant source of glacial cold. That it possesses the movement of a running stream is shown by the nature of the bottom, the pebbles there being rounded instead of angular; and that it comes from the polar regions, is proved by the fact that it may be traced to them in its slightly decreasing temperature. To the westward of the Faroe banks is a steep slope, going down 2,000 fathoms; from here to Labrador and Greenland is a wide channel, through which a large mass of ice-cold water may pass into the great Atlantic basin.

But water cannot be always flowing out of the polar regions without water from some other source constantly flowing in toward it; so that, if there is such an outflow below, the circulation must be completed by a constant inflow at the surface above. This Dr. Carpenter finds in the Gulf Stream, and the universal movement of heated water from the equatorial to the polar seas.—*The Week*.

SPONTANEOUS EXPLOSIONS.—F. Moigno says:—When finely pulverized chlorate of potash is put on a piece of paper (best dredged or dusted over it, so as to form a thin film of powder), and there is next poured over it a solution of phosphorus in bisulphide of carbon, there ensues, when the latter is evaporated suddenly, a most violent explosion, owing to the phosphorus being left in a state of extremely minute division and in intimate contact with chlorate of potash. This explosion is analogous to that which ensues when a small piece of phosphorus and some chlorate of potash are, when placed upon an anvil, struck with a hammer, but, in the instance alluded to, the effect produced is greater, owing to the extreme state of division and intimate mixture of the two substances. Care should be taken not to make this experiment with too large quantities of the chlorate and phosphorus solution, for fear of serious accidents which might ensue.

NATURAL SELECTION IN PLANTS.—An attempt is made by Dr. Chauncey Wright, in the *Memoirs Amer. Academy*, to explain on the principal of natural selection the existence of the modes of phyllotaxis most frequently found in Nature. These consist of two principal forms, the verticillate and the spiral, of which the latter is by far the most general and most complicated. By an elaborate series of circulations he shows that the particular forms of spiral arrangement actually found in Nature are those which possess the greatest advantage for the plant, by so arranging the leaves, and, therefore, branches, that they have the most perfect distribution for not interfering with one another, both in drawing nutriment from the stem and in exposure to the light.

Road Steamers—Rubber Tires.

The use of steam on common roads has made great strides during the past year, and it is but fair to Mr. Thompson, of Edinburgh, to state that much of this progress is due to him. Let what will be said on the subject of india-rubber tires, it is day by day becoming more evident that an elastic wheel of some kind is essential to the full success of the traction engine or road locomotive. One of the great objections to its use hitherto urged against it has been extremely slow speed at which alone it could travel. A nominal velocity of 4 miles an hour really means, when all deductions are made for the delays incurred by stopping for horses, taking in water, etc., a rate of not more than two miles an hour. This does not tell heavily in one sense against loaded engines, but it greatly increases the cost of working them, in that, in returning light for a second load, the duration of a trip is unnecessarily prolonged.

A traction engine, to be readily efficient, should be competent to travel, when it gets a chance, at six miles an hour; more is unnecessary for ordinary work. This speed cannot be obtained without springs of some sort. It is, however, very inconvenient to apply springs in the ordinary way to the driving wheels, for reasons too obvious to all builders of such machines to require comment; and it must further be remembered that, even if this were not the case, the duties of a spring are but half performed when the spring is located between the engine and the axle. A six feet wheel of sufficient breadth, to be strong enough, will weigh about 18 cwt., in some cases as much as 22 cwt. It is not too much to say that the dead weight, unaffected by the use of springs, will therefore amount in a 12-horse power traction engine to rather more than two tons, which is highly objectionable.

The only way out of the difficulty lies in placing the spring at or in the tire of the wheel, and the success which has attended Mr. Thompson in his labors is due to the fact, that his india rubber tire exactly complies with this condition. The great objection to the india-rubber lies in its enormous cost—over \$500 for a moderate sized engine—and the uncertainty of the material. Thus the Ravee on her wonderful trip from Ipswich to Edinburgh and back, rendered one leading tire useless on her journey to the north, and she disabled another on her journey to the south. As the tires cost about \$250 each, we have an outlay of about \$500 for a journey of 900 miles, or a cost of 67 cts per mile for tires alone. The ruin of the tire in this case was no doubt, mainly due to the heating of the rubber caused by the high speed maintained.—*Engineer*.

RAILROAD TORPEDOES.—One of the neatest and most effective little arrangements for safety in railroad operations is the "torpedo" or alarm signal. This little affair consists of a tin box about the size and shape of the smallest-sized blacking-boxes. The box is filled with an explosive compound, and two strips of tin are soldered to two opposite sides of the box perpendicular to its sides or edges, for fastening it to the rail. These boxes explode on the principle of the percussion-cap, with a loud report. They are in use on some roads for night signals and in foggy weather, when lights or flags would not be seen in time to prevent accident. Track-men are provided with these torpedoes, and in case of danger they are placed on the rail, far enough from the place of danger to prevent disaster. Usually three of them are placed a few feet apart, to insure their being heard by the engineer. They are reliable, and will explode at the touch of the wheel at the slowest speed. They cost but a trifle. It is said that the Reading company uses 35,000 of the torpedoes per annum on the roads which it operates.—*Railroad Gazette*.

QUICK WORK.—The Cabot Co., of Brunswick, in order to enlarge their cotton mill, lately moved their large smoke stack chimney—78 ft. high, 7 ft. 9 in. square at base and 5 ft. square at top, containing over 40,000 bricks and weighing over 100 tons—twenty feet without rollers, balls, guys or braces to steady it. Not one of those engaged had ever witnessed the moving of such a body. It was accomplished by building such ways as are used in launching ships; surfaces planed and greased, chimney wedged up and moved by two jack-screws in 4½ hours. The flues were disconnected from the boiler at 1 p. m., and at 9½ the same evening the flues were again connected, fires going and steam up.—*Industrial Monthly*.

ATMOSPHERIC THERMAL PARADOX.—The higher we ascend, the colder it becomes; and yet at very great elevations the rays of the sun exert a heating power greater than that which they are found to produce in the valleys. Prof. Piazza Smyth found, that on the top of Teneriffe, at an elevation 10,000 feet above the level of the sea, a thermometer exposed to the direct rays of the sun, showed a temperature of nearly 200° deg. Fah!—*Prof. Phil.*

The annual cost of maintenance of the galvanic batteries used by the Western Union Telegraph Co., is over \$125,000.

FLORICULTURE.

The Gladiolus.

There is perhaps no flower which has more rapidly grown into popularity than the gladiolus. The first of the "Gendavenses hybrids" seen in the United States were exhibited at the Massachusetts Horticultural Society in 1855, and from that day the popularity of this plant has been rapidly increasing, until it is now one of our most common flowers.

For parlor ornamentation the Gladiolus is very superior. If a spike with the lower blooms just opening, be placed in water, it will grow and expand until every bud has opened, sometimes continuing in full beauty for ten or twelve days.

The Gladiolus is easily cultivated, if proper attention is paid to a few simple facts. Rank manure and cold damp soil must be avoided—everything of a heating nature tends to cause disease in the plant. In the early spring select a warm, dry spot, thoroughly pulverizing the soil and fork in a liberal supply of well rotted manure. The manure should be intimately mixed with the soil.

The bulbs should be planted from four to six inches deep, according to their size—the largest the deepest. The stalks should be well secured to stakes as soon as they acquire much height. When the bloom has faded, if you desire good bulbs, cut off the flower stalks, but do not cut off the leaves until you take up the bulb, which should be carefully trimmed down and packed away for the next spring planting.

These plants are rarely grown from seed. If seed is desired, the flower-stalk should of course, be allowed to ripen its product, which it will do at the expense of the bulb. The seed should be planted in pots, or if in the ground, should be carefully attended to. When grown from the seed, the plant, with good attention, will bloom the second year. In growing from the seed, much pleasure may be derived in watching the development of the plant. Each stalk in the bed will afford a new revelation of beauty, differing in color and markings from all its fellows. Different varieties are obtained in this manner, and when a really beautiful one is found, it is usually named, and passes into the books as a new variety. Varieties are perpetuated by bulbs; every bulb being true to its original.

Now is the time, in this state, to look out for the seed. This splendid floral gem is now in the height of its beauty, and if seeds are desired, the most thrifty stalks should be set apart for ripening the same, and the seed should be selected from the finest flowers, which will generally be found near the center of the stalk. A few flowers only on each stalk, should be allowed to mature their seed, the others being pinched off, so that the entire strength of the bulb and stalks may be forced into more perfectly maturing the seeds of the selected flowers.

Arranging Flowers.

It is an art, requiring no small degree of taste and skill to arrange cut flowers so as to form an attractive bouquet, for the vase or basket. It may be said in general that the more loose and unconfined the arrangement is, the better. Crowding is especially to be avoided, and to accomplish this, a good base of green of different varieties is needed to keep the flowers apart. This filling is a very important part in all bouquet-making, and the neglect of it is the greatest stumbling-block to the uninitiated. Spiked and drooping flowers, with branches and sprays of delicate green, are of absolute necessity in giving grace and beauty to a vase bouquet. Flowers of similar size, form and color, ought never to be placed together. Small flowers should never be massed together. Large flowers, with green leaves for bouquets, may be used to advantage alone, but a judicious contrast of forms is most effective. Avoid anything like formality or stiffness. A bright tendril or spray of vine can be used with good effect, if allowed to wander over and around the vase as it will. Nevertheless the faculty of arranging flowers can hardly be acquired. It is innate.

Wild Flower Garden.

A little book has recently appeared in England which has given us much pleasure. The book is called the "Wild Garden," and its aim is to show the English people what a large number of garden plants, usually supposed to require careful cultivation, will, if planted out and neglected, take care of themselves, and go on and flourish from year to year—in short, become perfectly naturalized. He proposes that plants of this hardy nature should be planted in such nooks and corners as almost every large place presents, and thus from what he calls his "wild garden," where, instead of weeds, the place should be filled with pleasing flowers growing in a natural way. The idea is a happy one, and quite as practicable with us as in England. There is scarcely a farmer's wife who does not long for a garden, while but few of them are able to command the means and time to keep one in order. A neglected garden is a source of pain rather than pleasure, but if she could have a wild garden, when one of its merits was its freedom from care, it would allow many a one to enjoy flowers who might otherwise be deprived of this pleasure. Upon most every place there is a spot exactly adapted to a wild garden. If it is so rocky that it has been left untouched, all the better. Hardy bulbs, such as snowdrops, tulips, crocuses, hyacinths, daffodils, and others, do well year after year. Almost any of the known border plants that are found in old gardens are suited to the wild garden; the columbines, larkspur, moss pink, primrose, peonies, perennial phloxes, and a host of others. Some of our more attractive native plants would, of course, find a place here, and the late flowering chrysanthemums also. We can readily see that a wild garden can be made to the real lover of flowers a source of daily pleasure, from the time the first crocus pushes into early spring until frost has destroyed the last chrysanthemums.—*Ex.*

The Dahlia.

The dahlia takes its name from Dr. Dahl, a pupil of Linnæus. It is a native of Mexico, where it grows at an elevation of some 5,000 feet above the level of the sea. It was first introduced into Europe by the Marchioness of Bute in 1779, not quite 100 years ago. It reached this country from England many years afterward.

The native flower as first introduced was single, with simply a yellow disk, and dull scarlet rays—as unlike the magnificent flower now cultivated, as is the most gorgeous of roses to the original single wild rose.

* The dahlia is a fall or late summer flower, of a most exquisite rosette form, and quite artificial in appearance. It is a most magnificent and easily cultivated flower, a profuse bloomer and has for many years retained a most deserved popularity. It produces its most superb flowers only after the night's cool. It is usually propagated from bulbs; but it may also be propagated by cuttings from the stem, which take root freely. The dahlia has perhaps been brought the nearest to perfection of any flower which we have. No flower garden should be without this splendid specimen of the floral kingdom.

There are a great number of varieties, distinguished mainly by the various shades of the flowers. There are also standard and dwarf varieties. The dwarf pompon varieties produce very small flowers, exceedingly pretty and ornamental, especially if planted in beds and pegged down.

One of the most stately and magnificent of the standard varieties is the *dahlia imperialis*, which sometimes attains a height of ten feet, highly ornamental as a foliage as well as conspicuous for its finely shaped, drooping, single white flowers.

THREE BEST ROSES.—Fifteen of the most distinguished rose growers in England were separately asked to name 36 roses, and out of the number to designate 12 which they considered the best twelve. The result was that of the roses which were named, only three were on the record named by all as worthy to be placed on the first twelve. These three roses ought to be universally known, as every one who cultivates flowers wants the best roses as a matter of course. They are: 1. *Maréchal Niel*; 2. *Rose of Sharon*; 3. *Marie Baumann*. It will be observed that at the head of the three stands *Maréchal Niel*, sweetest of the sweet.

FARMERS IN COUNCIL.

San Jose Farmers' Club.

The San José Farmers' Club met at 1 p. m.; Vice-President J. W. Haskell in the chair. The Committee on the Purchase of Sacks reported progress. They presented two samples 9 ounce sacks, machine sewn, at 14½ cts.; eleven-ounce sacks, hand sewn, at 16½ cts., both in currency. It was thought that the difference between coin and currency would pay the freight, which would make it profitable for farmers to send East for their sacks.

Mr. Thompson suggested that farmers leave their orders at the club rooms during the week. He thought that we better order sacks from the East if we can save once cent on each sack.

Mr. Holloway said we could get second-hand sacks for 16½ cents or new for 18 cents that would hold 130 pounds each. Mr. Ware thought that second-hand sacks could be bought in San Francisco for 15 cents or perhaps less. He agreed to report the particulars next Saturday.

The Secretary had received no notice of the action of any other club in the matter of sacks, only such as is printed in exchange papers.

On motion of Mr. B. Casey, the Board of Managers were instructed to procure a new hall in a more central location, if practicable. Question adopted for discussion at the next meeting: Resolved, "That all license laws should be abolished."

Election of Officers.

The Club elected officers for the next year which resulted in the choice of Mr. Benjamin Casey, President; Messrs. J. W. Haskell and L. F. Chipman, Vice-Presidents; Mr. S. H. Herring, Secretary; Mr. Jessie Hobson, Treasurer, and Messrs. O. Cottle and L. S. Barnes, Managers. A vote of thanks was tendered the officers for the manner in which they had performed their several duties during the past year.

The Treasurer reported that the receipts during the year had been \$331.50 and the disbursements \$317.22, leaving a balance in the treasury of \$14.28. The subject of hay and haying was taken up. No one appeared to have anything to say; finally Mr. Holloway was prevailed upon to open the discussion. He said that it was a very old saying "That all flesh was grass." Science had more recently demonstrated it to be true.

Hay the Staple Crop.

In the East it used to be if a man had a well-filled corner he had everything, but here it is we have everything if we have a good haystack. The proper time to cut hay is when we can get the most substance from the ground. That is just as it is in the soft dough. We have too much grain and too little hay. Grain reduces while hay increases the richness of the soil. More hay and cattle will make a good future for the soil. The hay ought to be well matured before cutting. If rained on while in winrows or cocks it should not be stirred up. The climate is good and will dry wet hay without scattering. If one has but 160 acres let him put most of it in hay and feed it to something that can take itself to market. Bread-stuff has remained unchanged in price for thirty years, while meat has doubled and tripled in price; that ought to convince us where the money is. Don't undertake to stuff the world with bread. Make hay raise beef and the cattle will furnish the means for raising pigs, so let everybody have some meat.

Beef Don't Pay.

Mr. O. Cottle thought the reason farmers don't follow such advice is, that it won't pay. Such things regulate themselves. We can only realize about one cent per pound from grain fed to the best advantage to the best of pigs. It won't pay farmers to raise beef on land worth \$100 per acre. If we made a staple of beef, we would soon have a surplus. Beef won't keep, and we can't ship it; while grain can be sent to all parts of the world; hence, farmers raise grain.

Mr. Woodham took the ground that stock-raising won't pay on the dry farms. His next neighbor had tried it, and completely failed; while he stuck to grain, and, now owns both farms. Two or three dry seasons kill off the stock. Where last year the ground appeared quite barren, this year he has a crop of wheat that will keep him going for the next four or five years should they be dry, and without the least extra cultivating; and we can depend on a crop of grain at least once in four or five years. Home markets can not be depended on; they become overstocked; before so many lost all they had by their cattle starving to death, one could buy a beef animal for eight or ten dollars. If we tried to make a staple of hay and beef, it would soon be the same again.

Wheat and wool are good; they will keep, and can be exported.

Value of Straw.

Mr. Burgland said in dry seasons stock starved to death, because farmers were too lazy to save their straw from year to year. In this dry climate straw is nearly as good as hay in wet countries.

Mr. Dubois thought we could judge what is most profitable, from the actions of farmers. Diversity of crops is a humbug; good in theory, but won't do in practice. What kind of hay is best, depends on the soil and the season. Hay that turns off six or six tons of straw as large as your fingers, cannot be good. Cut wheat hay while in the dough; rake into winrows almost

immediately, then it cures evenly; otherwise, the leaf dries and breaks up. Leave in winrows two days, and in cocks a week, in favorable weather. In bunching, the butt of the stalk usually turns outward, and lies to the weather.

How to Load Hay.

Nearly one-half of the labor can be saved by knowing how to load and unload, and labor is money. Reach the fork over the bunch and place it in the side away from you, then it comes up easy. Commence at any part of the load and place the forkfuls in regular order against each other and keep on around and around in the same direction till the load is completed; and to unload, commence where you left off and reverse the operation; in this way one man can put off a load quicker than two, when there is no regular order in the arrangement.

Mr. Cadwell indorsed all the last speaker said about the manner of handling loose hay. In the older States formerly it was all wheat, now they raise a diversity of crops. What we ship must be something that will not impoverish the soil. All great countries are grass countries. The reason grain is generally adopted, is that it gives immediate returns, but the system is wrong. We must find something that will pay without ruining the soil. Stock leaves the soil improved in quality.

Diversity of Crops Necessary.

Holloway denied that we had already arrived at the best modes. Custom among farmers can not be taken as an infallible guide. The continued culture of cotton and tobacco had ruined much of the best lands of the country; wheat will do the same. True, wheat will keep and ship, but who keeps it? Calculate the profits on your grain crop you will find them small. Sell a bullock, a pig and a sheep occasionally, it pays better.

Mr. Hofson wanted wheat hay well matured, the grain quite plump, it gives better satisfaction. The country had been overstocked with nearly everything but hay. He wanted to see one big crop of hay, it would save us in dry seasons.

Too Much of one Thing.

People run to one thing in the hope of getting rich. In '53 his cousin raised a whole corral full of potatoes, and was so disgusted that since then he has not eaten one. What we need is more knowledge, and we are getting it in this club. We have got along finely; this makes a year, and we have no whisky ring or any other kind of rings.

Mr. Dubois protested against those attacks on wine and whisky we loose valuable members by them.

Mr. Chipman always lays up two years hay, and does not sell till sure of another crop; sometimes he gets less—but then he has the satisfaction of being prepared for a drought.

Mr. Ware wanted information, but had heard nothing yet. We like good stock. Good hay makes good stock. Hence he wanted good hay, but had mostly confined his farming to grain.

Clover may do for young cattle, but wheat gives most satisfaction for horses and milch cows. Sow wheat for hay thick and late. If a dry year comes on, it can be summer-followed.

When to Cut Hay.

If the season is wet, sow in April. Cut when in the stiff dough; grass may be cut earlier, as the desirable properties are in the stalks of grass, but of wheat they are more in the grain, and do not become developed till late. Barley must be cut earlier, or the barb on the beard may injure the stock. We should not rake too close, for the dirt gathered, injures horses; rake and bunch soon after cutting; this climate cures it in bunches.

Mr. O. Cottle thinks the sooner cut the better. His brother had cut a field when about a foot high and raked up the tender leaves—the field afterward made grain. The next spring his stock would leave the other hay for that, but perhaps the yield may be less.

Mr. Chipman said sow early for horses, but late for milch cows.

Mr. Brewer considered the season should govern the time of cutting; in wet seasons cut early, in dry, late. Cut wheat in soft dough; if you wait till hard, the stalks are injured.

Adjourned.

San José, June 23, 1872.

Vacaville Fruit Growers' Association.

EDITORS PRESS:—At a meeting held by the Fruit growers of Pleasant Valley and vicinity, on the 22d inst., for the purpose of arranging a Horticultural Society, this meeting was called to order by O. Bingham, and the following officers were elected:

O. Bingham, President; Wm. Finch and W. J. Pleasants, Vice-Presidents; H. H. Lewis, Secretary; D. E. Hoff, Corresponding Secretary.

After which, a proposition was made to enroll all who wished to become permanent members of the Society. The following gentlemen gave in their names:

O. Bingham, Joseph Longmire, Wm. Finch, Henry Seaman, G. B. Stevenson, W. J. Pleasants, L. Korno, W. E. Wildor, W. Cantelow, J. V. Stark, E. R. Thurber, H. H. Lewis, G. H. Thissell, I. S. Decker.

A committee was then chosen to draft a Constitution and By-Laws, consisting of W. Cantelow, Wm. Finch, J. Longmire, H. H. Lewis.

A motion was carried, to give to the So-

ciety, the name of Vacaville Fruit Growers' Association.

The next meeting will be held at Oak Dale Schoolhouse, Saturday, July 6, 3 p. m.

O. BINGHAM, President.

H. H. LEWIS, Secretary.

Vacaville, June 25, 1872.

Sacramento Farmers' Club.

The Club met last Saturday at the usual hour and place.

Railroad Charges on Freight.

The committee appointed at the last meeting to obtain a list of charges on freights from Wells, Fargo & Co., to different points where the Sacramento farmers are in the habit of shipping their produce, through J. R. Johnston, their chairman, submitted their report as follows: That they had called on Mr. Tracy, the agent and manager here, and had been very kindly and courteously shown all their rate tables desired. These rates are governed by various circumstances; they send their goods by railroad, steamboats, stage coaches and express wagons, and so are compelled to be governed by the royalty paid the road, the boats, and the prices they pay the stages and wagons, etc. Then again it costs them more or less to deliver goods at different points at equal distances, owing to whether there is more or less business done at these points through their house. The more business they have for any one point the lighter their charges; for they can get the freight on stages or railroads cheaper, and can make better terms with those who act as their agents. These circumstances explain the difference in their charges for freight to different points at equal or nearly equal distances. The committee also stated that as the express company was owned by the same parties that own the railroads of the State, it was next to impossible that any other express company could be established or the rates changed. They therefore recommend each shipper to make the best terms he can under the circumstances. In regard to fare charges on the railroad they were informed that new regulations will be adopted in July next, and that the rates will more likely be increased than lessened.

On Wine Manufacture.

P. H. Murphy presented to the club a bottle of wine of his make and invited members to taste and give their opinion of its quality. This was done.

Johnston remarked that it was very pleasant of taste, but was like most California wine, too strong in alcohol; that in his opinion our wine growers would have to learn to reduce their wines to a lower proof before they would become a common beverage.

Stewart—Time and age will reduce the quantity of alcohol in wine as they will reduce the proof in brandy.

Aiken—This should be done in the manufacture; the must should be reduced to the desired standard of saccharine matter before fermentation and then a uniform and proper quantity of alcohol would be the result.

Hoag—This is undoubtedly the correct proposition. It is the plan on which European wine growers operate. In those countries they have their wet and dry seasons. These are their favorable and unfavorable wine seasons. In the wet seasons the grapes contain a less quantity of saccharine matter than is desired and this is manufactured from the potato and supplied when the grapes are crushed. In the dry seasons there is an excess of sugar, and water and tartaric acid is used. In California the grapes almost always contain too much sugar and hence the wine has too much alcohol. Every wine maker should possess a saccharometer by which to test his grape juice, and should reduce it to such a standard as will give the wine the desired proof or quantity of alcohol. When this plan is adopted and intelligently used, our wines will become the common beverage of our people; will take the place of tea and coffee on our tables; will take the place of intoxicating drinks at our saloons and bars, and will thus become the aid and assistant of the temperance cause. Our grapes being so much more richer in sugar than those of Europe, gives us a great advantage over those countries if we will only thus avail ourselves of the facts. We can make a more uniform and a purer wine much cheaper, for the reason that we can produce more than twice the quantity of grapes to the acre of land, and the same quantity of grapes contains nearly twice the quantity of wine ingredients here as in Europe.

The City Market.

The committee to obtain subscriptions to the stock for a city market reported that they were meeting with good success, and asked further time, and it was granted.

The committee to report an ordinance to establish and regulate a market, through their chairman, Mr. Wolf, reported an ordinance which, after discussion and some alteration, was adopted, as follows:

ORDINANCE No. 1.—To establish and regulate a market for the sale of country produce. The Board of Trustees of the city of Sacramento do order as follows:

SECTION 1. Sixth street, between I and J, and J and K, in the city of Sacramento, is hereby designated and set apart as a market for the sale of country produce. It shall be lawful for all persons desiring to expose for sale at the place aforesaid any country produce excepting hay and grain—to station wagons containing the same on the street aforesaid at any time between the hours of 4 and 8 o'clock a. m. and 4 and 8 o'clock p. m. All wagons

shall be placed at the side of the street—the hind ends backed up to the curb of the sidewalk, and subject to such rules and resolutions as may from time to time be prescribed by the Superintendent of Streets.

Sec. 2. It shall not be lawful for any owner of any omnibus, hack, carriage, wagon or other vehicle not engaged in the business of marketing during the hours set apart for the purposes of said market, to drive through said streets so set apart faster than a walk. Any person violating this section of this ordinance shall for each offence be punished by fine not less than ten nor more than fifty dollars. It shall not be lawful for any person or persons to use any other street or part of a street than as herein designated, as a stand for a market for country produce, during the hours above specified; and any person violating this provision shall be punished by fine not less than ten nor more than fifty dollars.

Irrigation.

The regular subject for the consideration of the club coming up, Robert Williamson read an essay.

Mr. Williamson stated that N. Clark & Co., who carry on the pottery business in this city, for the purpose of having the value of their water pipe tested for underground irrigation, had made a proposition to donate 2,000 feet of the same to the club for the use of such members as desired to try it.

The club accepted the proposition and designated Williamson, Aiken, Rutter, Murphy and Miller as the parties to whom the experiment should be entrusted, the pipe to be distributed 400 ft. to each party, and to be put in use as soon as possible, and reports to be made to the club at the end of two months.

A considerable discussion arose here as to the relative merits of scantling grooved, and put together so as to make wooden pipes, and the earthen pipes.

The subject of irrigation was continued for consideration at the next meeting, and the club adjourned.

Solano and Napa Agricultural and Mechanical Society.

An interesting meeting of the Board of Directors of the Napa and Solano Agricultural and Mechanical Society was held at the rooms of the Merchants' Protective Union in Vallejo. Present, Directors Hoyt, Miller, Durpin, Morris, Reeves, Roberts, Middleton, Cantelow, Fisher, Gregory, Frisbie, Thompson, Hill, Barnes, Powell, Starr. The Committee on Constitution and By-Laws reported an incomplete draft and asked for further instructions from the Board in regard to the plan of incorporation. J. B. Hoyt, President of the Board and ex-officio a member of the Committee on Organization, stated that as his views did not harmonize with a majority of the Board or of the Committee on the plan of organization agreed on, he would tender his resignation as an officer, but promised as an individual member of the Society to render every assistance in his power to make it a success. The resignation of Mr. Hoyt was accepted with much reluctance by the members of the Board, and Mr. R. Miller, of Pleasant Valley was duly elected to the Presidency.

The following resolutions offered by Wm. Gouverneur Morris, was unanimously adopted:

Resolved, That M. R. Miller, Thos. L. Thompson, John Frisbie, and S. M. Gregory are hereby appointed a special committee for the purpose of completing the joint stock organization of this Society authorized at the meeting of the Board of the Directors June 3d, and that the Constitution and By-Laws, this day presented by the Committee, adopted June 3d, for the framing thereof, be so modified and altered as to conform to and be in harmony with the rules and regulations of said joint stock company, and the committees appointed to-day report to the Directors on Monday, June 24th, at 10 a. m.

Vacancies in the Board were then filled by the election of the following persons: John E. Williston, John Callender, John Brownlie, and Ed. McGarry, of Solano; Wm. Woodward, Robert Brownlie, George B. Clifford, of Napa; and Col. J. P. Jackson, of Calistoga. On motion, W. G. Morris, John E. Williston, James A. Hill, D. G. Barnes, and T. L. Thompson were appointed a special committee to select a suitable location for Stock and Fair grounds of the Society; communications to be left with the Secretary of the Society, J. M. Gregory, until June 22, at 9 a. m. There being no further business, the Board then adjourned until Monday, June 24, at 10 o'clock.

San Joaquin County Farmers' Club.

Met at 2 p. m., June 22, Dr. Holden in the Chair.

The attendance was light. The different committees being absent, Kerrick moved to adjourn, but at the request of the Chair withdrew his motion. The Chair stated that the subject of the meeting for this day to be "Fertilizing." At this moment Henry Hewlett, of the firm of Jones & Hewlett, introduced Massena B. Erskine, of the firm of J. C. Case & Co., Racine, Wisconsin. Mr. Erskine came forward and explained the working of their threshers, and said he would be pleased to place them in the field in competition with other machines. Mr. Hewlett explained that the reason why the Hall and the Pitts machines were not placed in competition with others, was they had been used here

for years. Kerrick said machines should be tested; that there were many new farmers in the country who could only tell what a machine was by what it done. Smythe endorsed the remarks of Kerrick, and urged the importance of tests. Hewlett said he could not place machines in competition when the owners declined to do so. Smythe said he would like to see some machine come into competition with the "Vibrator," but until some one did so the farmers must regard that as the best. Kerrick explained that a contest of machines could be arranged. Erskine said they only wanted an even show to contest with other machines. Smythe said he would furnish any amount of grain to thresh, and would pay eight cents per bushel for what it threshed. Ketchum said he had a communication from Mr. Sedgwick, offering a field, four miles from the city, in which the machines might meet in competition.

Napa County Farmers' Club.

The Club met pursuant to adjournment, and was called to order by the President. Minutes of the previous meeting read and approved.

The report of the Committee on Order of Business was received and referred, together with correspondence from Santa Clara Club, to the Committee on permanent organization.

The Committee on permanent organization asked until next Saturday to report, which was given by consent.

Mr. Daniel Gridley asked "How is the price of sacks affected by the new tariff rates?" which elicited some discussion but no definite conclusion.

Mr. Fisher, who is one of the directors of the Napa and Solano A. & M. Society, asked if the Club had any suggestions to make to that body through him. It seemed to be the general feeling that the grounds should be located at Adelante, as being more convenient of access to all parties interested than even Vallejo, and as offering a better site for a race track. The friendly and neighborly feeling of the people of Solano is heartily reciprocated.

The Secretary read an extract from the proceedings of the Santa Clara Club, embodying the address and resolutions of Mr. Ware concerning the assessment of growing crops. Mr. Saul thought we ought to take right hold of the matter and join with other clubs throughout the State in a remonstrance. After some discussion, showing the unfairness of the plan, the subject was laid over until next week.

Club adjourned to meet again next Saturday, at the Court House, at 2 o'clock, P. M.

W. A. FISHER, President.
G. W. Henning, Sec'y.
Napa City, June 15th, 1872.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA COUNTY.

Brooklyn Journal, June 22: Livermore Valley, with its thousands upon thousands of acres of wheat and barley, is beautiful to behold. There is every prospect of an abundant harvest, and the yield per acre will be as large as the most sanguine could have anticipated. For several years there have been no crops here of any consequence, in most instances being a total failure; and when they were not failures, barely enough was harvested for seed, with which to plant the same ground during the following year. But happily this state of affairs does not exist this year. All will have tolerable crops, while others, and by far the greater number will have excellent ones. The barley in this valley is now nearly ripe—in fact, it is ripe enough to head and stack, and it must be perfectly ripe when this is done. The wheat will not ripen until the first of July, and then but little of the early sown wheat, while the late sown wheat will all be fit by the 15th of July. The wheat promises to yield most abundantly along and upon the rolling hills skirting this valley. Haying is now about done with, and five dollars per ton is the price obtained when sold, as there is such an abundance of it.

BUTTE.

Enterprise, June 21: COMMENCED.—The harvest has commenced in earnest. McCagar runs three headers, one steam thrasher, and employs forty hands. W. H. Silsby and Blivens & Harris use the same amount of machinery, and employ each as many men.

Mr. Gridley of Hamilton owns 13,000 sheep, the yield of which the past shearing was 158 sacks of wool, 200 lbs. each. He has not sold a pound of it yet. He has raised 4,000 lambs this season, and had the misfortune to lose 7,000 sheep during the winter. Mr. Gridley owns large quantities of fine land, say 20,000 acres, and may justly be considered as one of our wealthiest men.

Enterprise, June 23: CHERRIES.—Some of the cherry trees in the Bidwell garden yielded this season \$200 to the tree. Their fruit sold in San Francisco for as much as sixty cents per pound.

Record, June 22: GRAIN.—Those who ought to know assure us that the grain crop of the county will be large. The cool days of last week were favorable for filling the growing grain, and the hot days of the present week have rapidly advanced the ripening process. The coming week will be a busy one with our farmers.

It is reported that the army worm has made its appearance in Sutter county and on the Honcut.

Berries, and table fruit generally, are abundant, although there appears to be a scarcity in the apricot crop.

Enterprise, June 22: NEPAUL BARLEY.—It looks like club wheat. Not only has it the appearance of wheat when in the chaff, but when in the shelled grain; being perfectly clear of covering, it is precisely like wheat. It is a rare kind, and there are only two fields of it in the State. It has no beard and will outweigh all other barley. Quite a number of our farmers beg the sample for seed.

Appeal, June 23: CHERRIES.—At Cumberson's fruit market we saw some heavily loaded cherry limbs, which came from the orchard of J. G. Briggs, Sutter county. The trees in his cherry orchard are loaded with fine fruit this season.

NEW GRAIN.—But little new wheat has made its appearance in market yet, and the new barley is not being moved very rapidly. Farmers are too busy to haul their grain now.

LABORERS.—Laborers are in great demand by the farmers everywhere throughout the farming country. There can be no possible excuse for people loafing about the streets of this city looking for work. They have only to cross the Feather river—and the bridge is free to foot passengers—and they can find employment at once. If a man really wants work, he need not look for it two hours, if he will go where labor is needed—in the country.

CONTRA COSTA.

Gazette, June 22: STRAWBERRIES.—Mr. George Wiggins, of this place, has brought us in a handsome sample of strawberries from this season's planting of vines. The sample, though taken from the vines after they had just previously been culled for the largest specimens, consisted of berries averaging nearly or quite three inches in circumference, and of rich color and flavor. The name of the variety we are unable to give; but Mr. Wiggins' success in producing such berries from the first season's planting of vines, is certainly very encouraging.

THE HARVEST.—The harvest in our vicinity has not yet begun, but the present warm weather will hurry it on, and next week, probably, the reapers will pretty generally be busy in the barley fields, and the wheat will be ready by the time that is out of the way.

ANTIOCH.—The first grain noticeable in leaving Antioch was the barley field of William Newman and son, now being cut and threshed. It is estimated that 140 acres will yield from sixty to seventy bushels per acre. Mr. Wills, in the field opposite, has 300 acres, which was greatly benefited by the recent cool weather and will yield handsomely. Passing out the "Sand Road" we noticed the field of John McQuade, 140 acres, sown with "White Chili" which looks magnificent. The grain is tall and thick, the heads are long and well filled. Mr. Robert R. Fuller, opposite, has about 140 acres will yield good.

FRESNO.

Merced Tribune, June 23: CORN PLANTING.—We understand that upon the Merced River bottoms many farmers are planting corn upon the land from which they have just cut crops of hay.

HARVESTING.—Haying is over with, and huge stacks of hay may be seen in almost every direction. Heading has fairly commenced, and though the wheat has been slightly damaged by smut, there is still over an average crop of that staple, while the barley will yield largely. All indications point to a busy and prosperous season for our farmers, the only drawback being a want of good farm-hands.

NEVADA.

Republican, June 22: WOOL.—The first shipment of wool for the season from Sierra Valley arrived in town yesterday. It consisted of four bales, and was consigned to parties in San Francisco. Sierra Valley will ship a considerable quantity of wool this season, and sheep raising is destined to be a profitable and important part of ranching in the valley.

Transcript, June 23: CATTLE and sheep are now being driven in large numbers from the valleys into the Sierra mountains.

HAY from Sierra Valley is selling at \$35 per ton at Truckee.

PLUMAS.

GOOD CROPS.—We learn from Sheriff Yeates, who has recently been on a trip to the upper valleys, that the crops are looking splendidly, and promise an abundant harvest. Plumas will probably raise a larger crop this year than ever before.

SAN LUIS OBISPO.

San Luis Obispo Tribune, June 22: GRASSHOPPERS ON THE WAR-PATH.—We have been informed by a gentleman who has just arrived in town from the Santa Maria, that countless myriads of grasshoppers have made their appearance in that valley during the last few days of warm weather, and that they are not leaving a vestige of anything standing in their course. The crops in that section are unusually heavy this year, and to be visited by such a scourge after the past two dry years is, we think, filling their cup of woe to overflowing. They are profiting by the old adage that "half a loaf is better than none," and are cutting all their wheat and barley for hay, ere the ravagers destroy it, and are selling the best of wheat and barley hay at from four to five dollars per ton.

Cambria, June 22: The agricultural prospects in this vicinity were never better. We have a very abundant hay crop, already cut. The weather has been all that could be desired for the purpose. We have had neither extremes of heat nor cold, but little wind and no rain; so that the hay harvest has been without interruption or injury. Wheat and barley look extremely well; except some late sowings. Corn and other crops are getting along famously, and give promise of a heavy yield.

CHEESE.—The Excelsior Cheese Factory is turning out over eleven hundred pounds of the last named commodity per day, of a quality that commands a high price in the San Francisco market, and has established a reputation second to none in the State.

WOOL.—Our Wool growers are in fine spirits, as the present prices of that article is so high that investments in sheep during the past year have paid from fifty to eighty per cent. profit. Three years more of good pasturage and high prices will turn our sheep-owners into Wool Princes, and the fleecy product will be King.

SOLANO.

Vallejo Chronicle, June 22: Apricots have made their appearance in the Vallejo market, selling for twenty cents per pound.

LAGOON VALLEY.—It presents a home-like appearance, and crops are looking better, but show evidence of too much rain. The Perra family, consisting of four or five brothers, own a large tract of land here, and are not strangers to agricultural pursuits, judging from the crops growing, and the fine fruit trees and vines cultivated around their residences. The men are industrious and intelligent Spaniards, and are educating their children to read and speak the English language fluently.

SAN JOAQUIN.

Republican, June 22: BLACKBERRIES.—Wild blackberries are said to be very abundant on the Tuolumne and San Joaquin river bottoms. Unfortunately, however, they are mostly surrounded by water, and almost unattainable.

LARGE YIELD.—Mr. Boggs, who resides at Oristimba, on the west side of the San Joaquin river, has just harvested sixty acres of barley, which produced 2,500 sacks of cleaned grain, or an average of ninety-six bushels to the acre.

NEW WHEAT.—New wheat is beginning to come in in large quantities.

FIGS.—Ripe figs are making their appearance.

GRAIN BURNED.—Yesterday a field of twenty acres of wheat, the property of James Messick, on the Calaveras river, near Linden, was destroyed by fire. A slough on one side and a field of green wheat on the other stopped the further progress of the flames. The fire resulted from carelessness in a wood chopper igniting a stump, and leaving it to burn in his absence.

ANOTHER.—In the vicinity of Ellis yesterday, a small fire started in a grain-field, originating, it is supposed, from combustion from exposed phosphorus, which had been used to poison ground squirrels. The timely arrival of help extinguished the fire. Loss small.

TUOLUMNE.

Democrat, June 23: OATS.—We saw a bunch of oats this week grown on the ranch of Riley Gilkey, a few miles from town; they were seven feet high, with heavy stalks and well filled grain of the "Surprise" variety. Mr. Gilkey says, he will make one hundred and ten bushels of oats to the acre on the small patch he experimented with this year.

Independent, June 22: Sonora markets

furnish abundance of vegetables, such as green peas, string beans, cabbage, new potatoes, celery, lettuce, carrots, beets, turnips, summer squash, cucumbers and radishes.

Prices of fruit in Sonora are: apricots, 25c per lb.; oranges and lemons, 3 for 25c.; limes, 50c. per doz.; Chickasaw plums, 25c. per lb.; cherries, 3 lbs. for 50c.; no strawberries in market.

SPLENDID GRAIN.—A few days since, Mr. Wm. Turner exhibited to us a specimen of oats, the finest we ever saw, raised on the ranch of Riley Gilkey, about four miles East of Sonora. The stalks were 7 feet high, heads full and heavy, the grains being plump as wheat. The seed, for which, Mr. Gilkey paid 10 cents per pound, is the variety called "Surprised oats," and is far superior to the famed Norway. One advantage is that stock will consume all the hay, without waste; and another is the great yield, Mr. G. obtaining 55 bushels from ½ an acre, or 110 to the acre. Good farming implies the best seed, and largest crops with less labor. Mr. Gilkey's half acre, with good seed, is another proof of this fact.

YOLO.

Democrat, June 22: HELP WANTED.—Harvest hands are very scarce in that county, and the editor is informed that from 500 to a thousand more men could find employment for the next three months at wages from two dollars upwards.

IDAHO.

Statesman, June 20: James A. Bennet, on the Payette, has lost a large quantity of old hay in consequence of high water.

Some disease has got among the horses, similar to mountain fever, which baffles all attempts to cure. A number of horses have died.

Crickets are destroying all the crops on the Pataha.

OUR ADVANTAGES.—Our valleys, hills and mountains are covered with nutritious grasses, with plenty of spring water. Plenty of low valleys and white sage land can be found where cattle winter and do well. Only one winter since 1862 have cattle had to be fed. Cattle have always borne a good price, and the increase of population, the building of railroads, and the easy facilities for driving to any market, is likely to keep up good prices for a long time. Work oxen are worth from \$100 to \$130 per yoke; beef cattle, 6 to 8 cents net; cows, from \$40 to \$60 a head. Our country is equally well adapted to raising sheep, hogs and horses, and they all bear good prices. There is plenty of room for stock growers, and would be if there were ten times as many as we have. Butter is worth 40 to 50 cents per pound; eggs, 50 cents per dozen; hams and bacon retail at 25 and 30 cents per pound, and beef 15 to 25. We have said that cattle seldom needed feeding during the winter—this is true. At the same time we have always advised cattle or stock men to provide a suitable amount of hay against a hard winter, should such an occurrence happen. This can be done by selecting some good bottom land in one of the low valleys.

OREGON.

FRUIT GROWING.—There are few, if any, farms in the Willamette Valley on which farmers cannot raise abundance of fruit for family use. The high, rolling prairies and bald hills are all adapted for such a purpose. But the paradise for raising fruit to the greatest perfection in the Willamette, is on the dry ridges among the timber. There is no frost there, the trees are sheltered from the wind, and the soil is exactly suited by nature to the growth of nearly all the fruits of the temperate zone. The wooded bottoms along the banks of the large streams, where the soil is not too wet, are admirably adapted to the growing of cherries, and plums in particular. Pears, apples, and the small fruits, do well on them also, so that a great part of the Willamette Valley is adapted to the production of fruit, and its resources in that respect are only limited by the demand.

One of the peculiar features of the fruit-trees of Oregon, is the very early age at which they commence to bear. The apple trees frequently bear at three and four years old, are vigorous for a great length of time, and, if permitted, would soon exhaust themselves. The apple crop has never failed in the Willamette Valley after the trees were of sufficient size to bear, and the same may be said of the pear, plum, and cherry. Fruit can be produced with as little labor as in any part of the United States. Pear blight is never seen. The plums raised in the Willamette are equal, if not superior, to any in the world.

MISCELLANEOUS.

An Invention Wanted.

The "Committee on Railroad Improvements" write to the *Boston Daily Advertiser*, offering to pay the sum of \$10,000 to any one who shall within two years from January 1st, 1873, invent a system of signals which shall supplant the use of steam whistles on railroads and which shall be pronounced by competent judges to be free from the evils of the present system, attended with no discomfort to passengers on the trains, or the highways, or to residents along the line of the railroads. The idea of doing away with steam-whistles on railroads may seem somewhat preposterous to many, but the committee bring many objections against its use, stating that thousands of persons, sick and well, are disturbed by it day and night, etc. They think that some substitute for it may be found suitable not only for locomotives but for manufacturing establishments, steamboats, etc., and with this view offer the above reward through the columns of the *Advertiser*. One fifth of the amount thus pledged shall be paid to the author of the improved invention at any time within the period specified whenever its claims shall have been substantiated by the appointed judges and the balance whenever the invention shall be adopted and used by a majority of the railroad companies in New England, provided such adoption be previous to January 1st, 1877. The letter says the judges shall be: "the chairman of the Massachusetts Board of Railway Commissioners; the President of the Boston and Albany and Boston and Marine railroad companies; the Professor of Civil Engineering in the Massachusetts Institute of Technology, and the chief locomotive engineer on the Boston and Albany railroad. If any of these gentlemen decline serving, the donors reserve the right of appointing substitutes.

At present railway whistles are a necessity for calling the attention of switchmen or when approaching stations or crossings, etc., and it would be unsafe to rely entirely upon a bell, since it can not be heard for any great distance. It can not be done away with unless some suitable substitute is at hand, and this reward is offered to stimulate the inventive faculty of the people in that direction. We hope that some of our California inventors will turn their attention to the matter and try their chances in securing the reward.

Japanese Advancement.

The Japanese Government has recently shown a laudable disposition to encourage and develop in their own country the improvements of modern civilization, and to this end it has within the past few years imported from the United States and various parts of Europe, skilled workmen in almost every branch of industry. It seems that among other valuable lessons gathered by their liberal policy of sending out Ambassadors to the various civilized countries of the world in order to learn the most practicable plan for the encouragement of home industries, they have learned that the best way to encourage improvements and consequently advancements in the various branches of science and art, it is necessary to have a law protecting and rewarding inventors.

To this end we see that a patent law has recently been enacted which will not only protect their home inventions, but induce foreign inventors to bring their new ideas to the Japanese country. Many of our American patentees could secure a patent in Japan, with great profit to themselves, and we do not doubt but that it will in the course of a few years be one of the best fields for the successful inventor. Now that the doors have just been opened we expect to do a lively business in Japanese patents, as the chances are that the first patents introduced into that country will be the most profitable.

WOMEN OF TAHITI.—A traveler in Polynesia concludes as follows a description of the women of Tahiti: The most bashful and coy will never pass you without a greeting, a glance of the eyes, and a slight gathering in of her dress with her elbows, to exhibit her buxom figure in full perfection. Or else, perhaps, she will come up, coquettishly, and ask you for the loan of your cigar, take a few puffs at it, and hand it back gracefully to the rather astonished owner; and then, with a parting compliment, when you most likely don't understand, let you go your way in peace—or not. The proper way to walk with your lady-love in Tahiti, is as follows: You put your arm around her neck, and she hers around your waist, and hangs on your breast in a happy affectionate manner. It is as much "selou les regles," as walking arm-in-arm, and much prettier to look at.

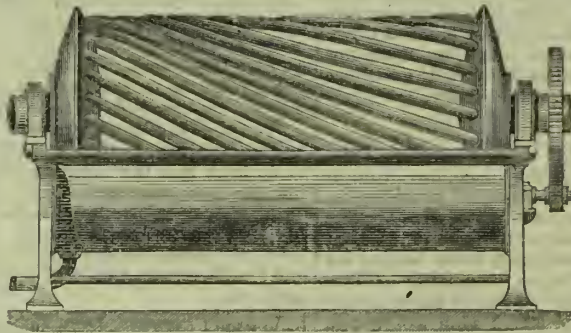
Low Heat Evaporators.

In all large sugar-making or sugar-refining establishments, one of the most important appliances that make up the grand total of their machinery, is the vacuum pan. All manner of saccharine juices as they are obtained from cane, beet, maple or sorghum are, or can be, easily evaporated without danger of injury from burning, to the consistency of heavy syrup, by almost any of the various open air evaporations now in use, under the ordinary pressure of the atmosphere. But when it becomes necessary to further concentrate the syrup to the point of crystallization and conversion into sugar, there is great danger of burning the same on account of its greatly increased density.

It is when in this condition, that the utility of the vacuum pan is brought prominently out; for by its use, instead of requiring a heat of 212° Fah. and over to produce ebullition and evaporation, by exhausting the air from the pan the syrup is concentrated by a rapid evaporation of the water it contains at a heat ranging from 150° to 180° Fah. which precludes the possibility of injuring the syrup by burning.

The objection to the vacuum pan for common use among farmers who would otherwise make their own sugar in many more instances than now, is its great cost, ranging from \$2,500 to \$8,000, depending upon size, and whether made of copper or iron.

To supply the want so seriously felt, a great many attempts have been made to construct apparatus that would concentrate syrups under



LOW HEAT EVAPORATOR.

the ordinary pressure of the atmosphere. The result has been, a number of contrivances more or less well adapted to the purpose.

One of the very best of these is figured in our illustration, and consists of an iron or copper pan in the form of a half of a hollow cylinder, in which is placed an open ribbed cylinder composed of a hollow disk at each end, connected by a number of copper tubes, two inches in diameter; these are brazed at each end perfectly tight.

The hollow disks and the pipes connecting them are heated by steam, usually the exhaust steam of an engine, or the heated air and gases from the furnace before passing into the chimney. Either of these is made to pass through the disk and tubes, entering at one end of the shaft which is hollow, and passing out at the other.

The juice or syrup being placed in the pan, and the cylinder made to revolve, a rapid evaporation ensues at a temperature quite below 212° or the boiling point of water. The same apparatus is equally applicable to the concentration of saline waters, or those containing any of the mineral salts.

From the principles upon which this method of concentration is based, it is evident that its successful working will depend upon the degree of dryness of the atmosphere and upon the rapidity with which the air passes over the surface of the syrup. The apparatus should therefore always, when it is practicable, be placed at the windward side of the house; at all events it should be beyond the influence of the vapors which arise from other evaporating vessels.

In this pan it will be observed in the illustration that the pipes are curved into a spiral instead of being straight, this curvature avoiding the beating action in entering the syrup, which causes frothing, affords greater facility for the removal of the condensed water, and enables a greater quantity of heating surface to be got within a given space.

We might mention other arrangements of low temperature pans, but all are constructed upon the same principles and we believe that none are superior to the one we have described.

It can be used with great economy where the atmosphere is dry and has a brisk motion.

Adulterations.

OPIMUM.—There are now many new adulterations to notice in opium; an unusual proportion of leaves may often be observed, and a stray bullet or piece of quartz may often be picked out; the monotony is sometimes relieved by finding a considerable quantity of starch. James T. King, in *Am. Journ. Pharm.*, vol. xvii, p. 1, found fourteen per cent. of moist starch in one sample, and sometimes a powder resembling sulphate of lime is used; the opium, when treated in this way, becomes hard very soon, but good opium can be had now in the market at a reasonable price. Powdered opium mixed with powder of liquorice is yet to be seen, and some druggists regularly send their proportion of ext. of liquorice with their opium to be ground at the mill. The large quantity of government powdered opium thrown on the market at the close of the war, had the effect of supplying the trade with a good powder; but this, though occasionally seen now, has almost disappeared; one druggist told us he bought up a half barrel of opium pills, and had them powdered for his use. This powder would then contain sixteen per cent. of soap as an adulteration, granting that the pills had been made according to the U. S. P. formula.

IRRIGATION AROUND VISALIA.—The means of irrigating this region may be divided into three classes. First, by wells on the ground, either flowing of themselves, or with the water thrown to the surface by means of pumps. This means is entirely under the control of the individual culti-

vator, and must be left to his own taste and discretion. The second means would be an expensive aqueduct, raised high above the surface of the ground, and many miles in length, after the fashion of some ancient water works. This would require immense capital and organization. But with us, there is another middle plan yet possible, and entirely within the reach of small companies. That is, short, but large and substantial ditches from some of our live water courses, to serve a neighborhood. Even after the grand works are accomplished these details are often necessary to bring the benefits to every farm, so that, in no event would the labor be lost; and in the meanwhile an excellent purpose would be served. Like the valley of the Nile, our great want is well distributed water. Without it our plain will ever remain a wilderness. With it, no section of our country will be so rich in the fruits of nature.

TREED AT LAST.—For some years past a California lion has been domiciled on Pilot Knob mountain, in the Indian Springs region of this county, successfully baffling the efforts of dogs and hunters to bring him to bay. On Thursday last, however, Ferd Montgomery's dogs caught sight of and went after the critter, and succeeded in treeing him on Hatch's ranch at Indian Springs. Cornelius Van Slyke soon after came on the ground with his rifle, and after lodging a mass of bullets in his innards the critter giv in and gathered up his feet in death. The vicious animal measured seven feet in length, three feet in height, and weighed 120 pounds.—*Sentinel*.

NEPAUL BARLEY.—From Major Biggs, of Hamilton township, we have received a bunch of what at first glance we were disposed to call club wheat. Not only has it the appearance of wheat when in the chaff, but when in the shelled grain; being perfectly clear of covering, it is precisely like wheat. It is a rare kind, only two fields of it in the State. It has no beard, and will outweigh all other barleys. Quite a number of our farmers beg the sample for seed. Our thanks are due Tom R. King for his kindness and promptness in the delivery at our sanctum.—*Chico Enterprise*.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JUNE 4TH.

WATER WHEEL.—Walter Forward, Battle Creek, Cal.
GANG PLOW.—David A. Manuel, Napa, Cal.
STENCH TRAP.—John Marquis, S. F., Cal.
TRACTION ENGINE.—Oliver A. Olmsted, Sebastopol, Cal.
MODE OF OPERATING ROCK DRILLS.—Ambrose Blatchley, S. F., Cal.
COMPOSITION POST FOR FENCES, TELEGRAPH POLES, ETC.—John L. Boone, S. F., Cal.
COMPOSITION RAILROAD TIE.—John L. Boone, S. F., Cal.
BUILDING BLOCK.—John L. Boone, S. F., Cal.
NEEDLE SETTER AND TWEezer FOR SEWING MACHINES.—John C. Schlarbaum, San Jose, Cal.

REISSUE.

GOVERNOR.—Charles P. Bowen, Silver City, Idaho Ter.—Patent No. 120,366, dated Oct. 31, 1871.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

PRESERVING IRON.—William H. Sterling, New York City, N. Y. Dr. Sterling, although a resident of New York City, has been for a considerable time stopping in this city. His invention contemplates the permanent preservation of iron. This he accomplishes by first heating the iron in vacuo, in order to expand it and open the pores, and then forcing some non-oxidizing or non-oxidizable substance into the interstitial and intercellular spaces of the iron, and then allowing the iron to cool. This thoroughly impregnates the iron with a substance which will prevent it from rusting or deteriorating in any manner. Amongst numerous substances which can be used with the above result, the inventor especially mentions and states his preference for paraffine. We regard this as one of the most valuable patents which has ever been taken out by an inventor on this coast. England has offered a large reward for any process that will prevent iron from oxidizing, in order that their iron ships might be rendered proof against the oxidizing effects of salt water, which soon destroys their iron plating; and we hope that Dr. Sterling will be the fortunate one to receive it.

MAGNETIC INDICATOR.—Jacob Unna, San Francisco, Cal. This is quite a novel and exceedingly interesting arrangement of questions and answers, so arranged, that the device appears to persons unacquainted with its operation, to be operated by magic. The indicator is intended as a toy to be used both for amusement and instruction, as it can be made to answer any number or variety of questions in an entirely magical way. It consists of a shallow box provided with a glass cover. Below this cover an index finger is suspended so as to vibrate freely in a circle. The suspension of this finger is hidden by a circular card which covers the center of the cover, and outside of this card the glass is also covered so as to leave only an annular space through which the motion of the finger is visible.

A circular card or disk, which may be provided with questions of geography, mathematics, or of any desired character, around its periphery is placed upon the center card, and is so constructed that a magnetic attraction will be exercised so as to cause the finger to immediately move around and point to the answer to the question propounded by the card. These answers being arranged on the outside of the annular transparent space. The Indicator never answers a question incorrectly, but is a very interesting teacher, and is capable of teaching many valuable lessons even to old persons. A. Roman & Co., of this city, have purchased the entire right conferred by this patent, and will shortly introduce the Magnetic Indicator to the public, when we predict that they will meet with a ready sale.

HYDRAULIC NOZZLE.—R. R. and Joseph Craig, Nevada City, Cal. This is an improvement in hydraulic nozzles which has for its object prevention of the stream from bursting or assuming a rotary motion as is the case in ordinary nozzles. This is accomplished by constructing the nozzle, or one portion of it, with three sides or of a triangular section so that the body of water will be carried through it in a direct line, the angles and peculiar form of the nozzle preventing the stream from twisting.

USEFUL INFORMATION.

How Birds are Taught to Sing.

Each kind of bird sings its own peculiar notes, but all may be taught to sing regular tunes. The mocking-bird and thrush learn tunes without training. But, by a regular education, other birds may become fine performers. A contributor to the *Nursery* says:

Last summer I was at a friend's house at Nahant. I rose early in the morning, and went down stairs to walk on the piazza. While there I heard, as I thought, some person whistling a tune in a very sweet style. I looked around, but could see no one. Where could the sound come from? I looked up, and saw a little bird in a cage. The cage was hung in the midst of flowers and twining plants.

"Can it be," thought I, "that such a little bird as that has been taught to sing a regular tune so sweetly?"

I did not know what to make of it. When my friend came down stairs, she told me that it was indeed the little bird who had whistled the sweet tune. Then my friend cried out to the bird, "Come, Bully, Bully, sweet little bullfinch, give us just one more tune." And then this dear little bird hopped about the cage, looked at its mistress, and whistled another sweet tune. It was so strange to hear a bird whistle a regular tune!

"Now, Bully," said my friend, "you must give us 'Yankee Doodle.' Come, come, you shall have some nice fresh seed if you will whistle 'Yankee Doodle.'" And the little thing did whistle it, much to my surprise.

My friend then told me that she had brought the bird from the little town of Fulda, in Germany, where there are little schools for teaching these birds to sing. When a bullfinch has learned to sing two or three tunes, he is worth from forty to sixty dollars, for he will bring that price in France or England.

Great skill and patience are needed to teach these birds. Few teachers can have the time to give to the children under their charge so much care as the bird-teachers give to their bird-pupils.

The birds are put into classes of about six each, and kept for a time in a dark room. Here, when their food is given to them, they are made to hear music, so that, when they have eaten their food, or when they want more food, they will sing, and try to imitate the tune they have just heard. This tune they probably connect with the act of feeding. As soon as they begin to imitate a few notes, the light is let into the room, and this cheers them still more, and makes them feel as if they would like to sing. In some of these schools, the birds are allowed neither light nor food till they begin to sing. These are the schools where the teachers are most strict.

After being thus taught in classes, each bullfinch is put under the care of a boy, who plays his organ from morning till night, while the master or mistress of the bird-school goes round to see how the pupils are getting on.

The bullfinches seem to know at once when they are scolded, and when they are praised by their master or mistress; and they like to be petted when they have done well. The training goes on for nine months; and then the birds have got their education, and are sent to England or France, and sometimes to America, to be sold.

All animals, all birds, and all reptiles—even fishes—are susceptible of culture and improvement. So are plants, roots, and fruits. And, above and beyond all, are human beings capable of almost illimitable development and improvement, both of body and mind.

How to Take Care of a Flute.

Anoint the flute thoroughly and repeatedly with pure raw linseed oil prepared by letting it remain unshaken for several weeks, when the clear oil should be poured off for use. It should be applied, inside and out, every time the flute is put away, it having been carefully cleaned from moisture for the first year, after which an application once a month will be sufficient. Pure olive oil will do better, but it must be oil of olives. On taking the flute from its case for use, the oil should be wiped out with an old silk handkerchief (cotton will do for the outside) wrapped tightly around a stick, using as much friction as possible. This will produce a burnished surface, which, besides aiding in filling the pores, adds to the mellowness of the tone. Care must be had to prevent the metal or anything other than the silk from touching the flute, and to apply the pressure equally on all sides, otherwise the bore will become distorted. To stop cracks that have already appeared, pack them full with good beeswax which has been mixed, by melting and stirring, with a small portion (say one sixth) of rosin, sufficient to stiffen but still leave it viscid; apply when cooled, and cram it in with the finger. Do not be tempted to use shellac or any rigid cement, as it will fail on account of the distention and contraction of the wood by change of temperature. It is well to pass your thumb over the cracks, filled as above, before commencing to play, the object being to smooth them down and insure their being tight, which rigid cement will not admit of.

Filing Saws.

The grand secret of putting any saw in the best possible cutting order, consists in filing the teeth at a given angle to cut rapidly and of a uniform length, so that the points will all touch a straight-edged rule without showing a variation of a hundredth part of an inch. Besides this, there should be just enough set in the teeth to cut a kerf as narrow as it can be made, and at the same time allow the blade to work freely without pinching. On the contrary, the kerf must not be so wide as to permit the blade to rattle when in motion. The very points of the teeth do the cutting. If one tooth is a twentieth of an inch longer than two or three on each side of it, the long tooth will be required to do so much more cutting than it should, that the sawing cannot be done well. Hence the saw goes jumping along, working hard and cutting slowly. If one tooth is longer than those on either side of it, the short ones do not cut, although the points may be sharp. When putting a cross cut saw in order, it will pay well to dress the points with an old file, and afterwards sharpen with a fine whet stone. Much mechanical skill is requisite to put a saw in prime order.

One careless thrust with a file will shorten the point of a tooth so much that it will be utterly useless, so far as cutting is concerned. The teeth should be set with much care, and the filing should be done with great accuracy. If the teeth are uneven at the points, a large flat file should be secured to a block of wood in such a manner that the very points only may be joined, so that the cutting edge of the same may be in a complete line, or circle. Every tooth should cut a little as the saw is worked. The teeth of a hand-saw for all sorts of work, should be filed fleaming, or at an angle on the front edge; while the back edges may be filed fleaming, or square across the blade. The best way to file a circular saw for cutting wood across the grain, is to dress every fifth tooth square across and about one-twentieth of an inch shorter than the others, which should be filed fleaming at an angle of about forty degrees.—*Industrial Monthly*.

HARDENING PLASTER OF PARIS.—In many cases the rapid consolidation of plaster of Paris is a serious inconvenience; and it is said in the Paris journal, *Les Mondes*, that this may be remedied by the addition of from two to four per cent. of the root of marsh-mallow, finely powdered. With this addition, plaster, it is said, will not set for an hour at least. The mixture, moreover, becomes so hard on drying that it may be sawn, filed, or turned, and is applicable to the manufacture of dominoes, dice, and other small articles. If the addition of marsh-mallow root be carried to an extent of eight per cent., the time of setting is still further prolonged, and the hardness of the mass of plaster, when cold, greatly augmented. Such a composition may, while still soft, be rolled out on a glass slab, and thin sheets produced, which never crack in drying, and which may be afterwards easily detached, and polished by mere friction. Colors may be incorporated with the mixture, and good imitations of marble produced by careful manipulation, or the sheets or slabs may be painted upon when dry, and rendered impermeable by polishing and varnishing.

A WONDERFUL SPRING.—Silver Springs, Fla., is one of the greatest curiosities in the South. It burst forth in the midst of the most fertile country in the State. It bubbles up in a basin near one hundred feet deep and about an acre in extent, and sending from it a deep stream sixty to one hundred feet wide and extending six to eight miles to Ocklawaha river. In the spring itself fifty boats may lie at anchor—quite a fleet. The spring thus forms a natural inland port to which three steamers now run regularly from St. John's, making close connections with the ocean steamers at Palatka. The clearness of the water is truly wonderful. It seems even more transparent than air; you see the bottom, eighty feet below the bottom of your boat, the exact form of the smallest pebble, the outline color of the leaf that has sunk, and all the prismatic colors of the rainbow are reflected. Large fish swim in it, every scale visible, and every movement distinctly seen. If you go over the spring in a boat you will see the fissure in the rocks from which the river pours up like an inverted cataract.

HOW TO BUILD BRICK CHIMNEY-TOPS.—All the brickwork above the superstructure, whatever the material of the building, should be made with cement mortar, which absorbs less moisture than that made of caustic lime and sand. The bricks for a chimney-top should be soaked in water for a few minutes, so that they will not extract the water from the mortar. In order to have mortar become very hard, it must dry slowly. By laying wet bricks, the mortar will set slowly, dry slowly, and eventually become almost hard as the bricks. Every brick chimney should be covered at the top with a copestone, and arched top, or bricks placed over the flues, like the rafter of a building, for the purpose of turning off the water which would go down the inside, be absorbed by the bricks, and perhaps soak through and wet the paper or kalsomining on the inside. A chimney-top made as above will stand the influences of the weather over a hundred years without repairs.—*Industrial Monthly*.

GOOD HEALTH.

Times of Eating.

There is a good deal of shoddy in the popular notions and instructions about the number of times and the times of day of eating. Some people say eat twice a day, others three times, and yet others say eat as often as hunger prompts you. Civilized mankind differ very widely in different countries and different occupations regarding this matter; some people eat five or six times a day and are proverbially healthy, others, and our own among them, eat as a rule but three times and are not as healthy.

There have not been wanting legions of preachers on hygiene who have aimed at the restriction of all men to one rigid rule as to the whole habit of eating, insisting that any infringement will certainly be followed by disaster. But the only thing we have or do insist upon as a rule of eating is that there ought to be some rule and this as a rule adhered to. If a man feels better and is better with two meals instead of three let him take only that number; or if four instead of three agree with him he must be foolish to forego any of them; every man must be in some measure a law unto himself.

But we do not believe that any man can long avoid dyspepsia who does not take his meals every day at the same seasons respectively; he must have some regularity as to time if he would be well, and all the observations of physiology bear out the statement. At the accustomed time of a meal, the stomach and other digestive organs prepare themselves by a large manufacture of digestive fluid for their normal task whether food comes to them or not; and every time they do so to prepare to digest food without getting it, they are thereby injured. People who eat irregularly—not who eat often—are more often sick and wear out faster than they who observe regular habits.

Nevertheless, for those whose whole lives are regulated like clock work, as to the time of doing everything, it often is a good thing to break in on the routine by some change, which if often repeated would do injury. A change is a rest, and a change in our regular habits may and often does give the physical system a new life. But to follow up late suppers unless they be made a matter of every day enjoyment would be very injurious.

We know from much observation that farmers, especially the younger members of the class, are much in the habit of eating just before retiring for the night. Now if one can do this every night and be healthier by it, of course it is not to be condemned—and we are far from believing, after some lengthened study on this subject, that it is impossible that any man may be more healthy with such a habit than without it. But we do not feel certain no one can be well doing this every other night; he must make it a regular habit or do it only at long intervals.

There is one sort of a person who may profitably, if not take suppers just before retiring, certainly take four meals with profit; we mean such as require a large amount of food and who at each of the three meals are apt to eat too much, feeling after eating drowsy, having much flatulence and some hours after the supper having an accumulation of acid in the stomach that makes them imagine themselves hungry and in need of food, when they have only irritated stomachs. By dividing the quantity of food to be consumed daily into four instead of three portions, the stomach may be able to dispose of it in a normal manner.—*Prairie Farmer*.

SICK HEADACHE.—The true cause of sick headache lies deep in the patient's idiosyncrasy, and is developed by a hundred different causes. The advice, then, to sufferers is to give as much tone as they can to their nerves by adopting all those methods which experience has shown to be good, and then avoid as far as practicable, all those causes which are known to excite an attack. I need scarcely describe a sick headache—how one rises in the morning more dead than alive; perfectly unable to swallow the smallest particle of food, and often perhaps actually sick; how the head throbs, and the pain increased by the slightest movement; how speaking or doing is a burden beyond bearing; how one prays to be left alone in the utmost quiet, so that he may, if possible, sleep. To other persons the sufferer looks extremely ill, very pale, dark around the eyes, and with contracted pupil. To himself his head feels hot, and the application of cold is most refreshing. The clamminess in the mouth, the nausea and general gastric disturbances are secondary, and have no connection with any improper meal, and thus is in no way relieved by the too frequent and ignorantly administered purgative. This is not needed, and has no good result. The only remedies which are of any avail are those which act on the nervous system, such as hot tea and coffee; or, after the stomach is quieter, and the more urgent symptoms have passed off, a little wine or ammonia. If the headache take more the form of hemi-crania, then remedies are occasionally useful, as the local application of the bisulphide of carbon, or galvanism, and internally the bromide of potassium. This is the only drug which I have really seen to be serviceable. Whilst the nausea exists and the worst symptom prevails, even this remedy is of no avail.—*British Medical Journal*.

Origin of Disease.

Most medical writers and students now differ the humoral theory of disease. This was the theory of the ancients. During the last century, the opposite theory was entertained, and it was maintained that disease was primarily of the solid parts of the system, and that the blood and other fluids became corrupted as a consequence of disease of the solid parts. Modern experiments and research have proved the fallacy of this theory, and demonstrated that bone, muscle, nerve, *fascia*, and all other solid parts, are continually renewed by material drawn from the blood, and that these become diseased only when the blood from which they are nourished deviates from its normal healthy character. Modern science justifies the intuitions of the ancients.

In some diseases, we find the blood carrying too much, and in some too little, earthy matter; there is sometimes an excess, and sometimes a deficiency, of various elements of nutrition, and sometimes the blood is in a state of feverish, yeasty ferment. Of course, the nerves, muscles, etc., built from such blood must be of abnormal or defective organization, for a good article of any thing can be made only of good material. Therefore, in disease, our attention must be directed to purifying the stream from which the affected organs derive their sustenance. The source of this stream is the digestive and assimilative systems; and, to insure good blood, from which sound organs can be built up and replenished, it is essential to furnish good blood-making material, and that the organs for transmitting this into blood be in healthy condition. As these organs are themselves built up and their waste repaired by blood from the general circulation, the same rule applies to them as to other parts of the body.

Almost every form of chronic disease can be traced to some dietetic error. The patient has used improper food, or eaten too frequently, or in too great quantities, or the hours of work and rest have not been such as to favor perfect digestion. These errors may not have produced immediate results, and the patient may truthfully assert his present care in the choice of food and the skill with which he orders the conditions for perfect digestion. The errors were probably in years past, when he felt no ill-effect of his folly. But, during these years, the integrity of the vital organs was being steadily impaired, and their vitality depressed. The effect of this is seen in premature decay, and disease of some kind fastens upon the weaker or more outraged organs. Every person born of reasonably healthy parents, and under favorable conditions, has a stock of vitality which, properly treasured and carefully used, should insure health and vigor to the age of three-score or three-score-and-ten years. Yet one-half of the whole community, both men and women, are falling at thirty, and broken down at forty.

Wine as a Beverage—Tendency of Alcohol to Disturb Healthy Action.

In all our common articles of food, the elements of nutrition and respiration, are so nicely balanced in their proportions, that, for the diet of a healthy man, there is no necessity for adding an extra quantity either to the one class or the other; or, in other words, the supply of nutrition and of animal heat is so admirably equalized, in the composition of common food, that any material derangement of the proportions which it affords, is attended with a corresponding derangement of the vital functions. It is obvious, therefore, that if we add a portion of alcohol to the food taken into the stomach, the elements of respiration are increased, and the animal heat augmented in a proportionate degree. No part of the alcohol can go to form the tissues of the body, or to renovate and sustain them, as it is destitute of nitrogen, and not an element of nutrition. It can only serve as an element of respiration, to be burned in the lungs of a man, and to add to the amount of his animal heat. The result is, that as the quantity of alcohol is increased from habit, an unnatural exhilaration is produced, leading to an overtasking of the muscular and nervous systems, and to premature decay in the manhood of the victim. To use a familiar phrase, he has "lived too fast." Let us gain a clearer view of this point by contrast. We know that an insufficient supply of food tends to produce paleness of the cheek, because both the animal heat and the nutrition are less than is demanded to keep up the healthful condition of the system. On the other hand, where age has not indurated the skin, an abundance of food keeps up the vital powers, and the face, possessing the ruddy color of health, bears testimony to a well-stored stomach. But when alcohol is added, in such a case, in excess, the nice balance between nutrition and respiration is destroyed, the healthful action of the animal functions is impaired, the ruddy glow of health disappears from the cheek, the deep red of the furnace heated by flame overcasts the countenance, and the habits of the inebriate stand revealed. Now, if pure alcohol will do all this upon a healthy constitution—and none dare gainsay its truth—how much more fatal, and how much more speedy, must be the production of the crisis, in the drinker's career, where deleterious compounds are used in its stead?—*California Cultivator*.



PUBLISHED BY
DEWEY & CO.

A. T. DEWEY, W. B. EWING, G. H. STRONG, J. L. BOONE.

PRINCIPAL EDITOR.....W. B. EWING, A. M.
ASSOCIATE EDITOR.....J. N. HOAG, (Sacramento.)

OFFICE, No. 338 Montgomery street, S. E. corner of California street, where friends and patrons are invited to our SCIENTIFIC PRESS, Patent Agency, Engraving and Printing establishment.

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SAN FRANCISCO:

Saturday, June 29, 1872.

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END OF VOLUME THREE.—The present number closes the third volume of the RURAL PRESS, and presents a most fitting opportunity to commence with new subscriptions. We shall have a word to say about the condition and progress of our enterprise next week.

RECEPTION TO DR. LOGAN.—Dr. T. M. Logan, one of our Sacramento correspondents, and an early and highly respected physician of that city, was made the recipient of a complimentary reception, attended by a banquet, on the occasion of his recent return from Philadelphia, whither he had been to represent the medical fraternity of this State at the late National Medical Convention. The reception was given by the Sacramento Society for Medical Improvement, and was largely attended. The address of welcome, by Dr. Hatch, President of the Society, and the reply of Dr. Logan, were both well conceived, and most appropriate to the occasion. We regret that their length, and the crowded state of our columns, will not admit of their insertion in the PRESS. Several appropriate toasts were given, and duly responded to. The occasion was really a feast of reason and a flow of soul. As an evidence of the estimation in which Dr. Logan is held by the members of his profession at the East, we may remark, that the Doctor has been chosen President of the American Medical Association, by the Convention, to which he was accredited, and whose duty it is to name that officer.

CORRECTION.—In the correspondence of L. P. Mc. in our last issue the type made him say that the building, lot, etc., of the Bank of Napa cost \$3,000; it should have been \$30,000.

Editorial Notes Among the Farmers.

Having remained in Oroville a part of one day—we could have spent three days profitably among the farmers in that vicinity—we left at 1 P. M. of the 12th inst. per the Chico stage, for the farm of

Moses Wick.

Mr. Wick's place is on the direct road from Oroville to Chico—ten miles from the latter place, and fifteen from the former. Before the completion of the railroad from Marysville to Chico, a large portion of the travel between the central and northern portions of the State and the Oregon travel, passed over this road, when Wick's place was an important stopping place, and his hotel made him a great deal of money, and he paid little attention to farming except to cut hay for the stock of his customers. The hotel business having fallen off very much, Mr. W. has turned his attention to the improvement and stocking his land, of which he has something over a thousand acres—a large portion of it being very rich valley land, and well watered.

Thoroughbred Stock.

In 1871, Mr. W. imported from Ohio and Illinois, 27 head of thoroughbred short-horned Durham cattle. At the time of the last State Fair, although Mr. Wick's cattle were in poor condition, and although he did not expect to obtain any premiums offered on that occasion—like a true Californian who has the good reputation of his State at heart, he exhibited some eight head of hells and cows, and his cattle attracted a good deal of attention from good judges. Since that time, they have improved in condition very much, and the younger hells and heifers, have come out A No. 1. Though he has sold a number of head at good prices, the natural increase has more than kept pace with his sales, and his herd now numbers 35 head, including calves; fifteen head of breeding cows, some five or six head of hells two years old and over, and the balance bulls and heifers of less age. Those who want to buy good bulls, would do well to call on Mr. W.

He intends to exhibit a large number of his stock this fall, at the State Fair, and we give his competitors notice, that they will have to show mighty good stock, or they will come out of the hands of the committee second best.

To Chico.

Having enjoyed the bounteous hospitality of Mr. Wick, we accepted an invitation to ride to Chico, with him next morning. On this route, we passed through thousands of acres of high plain lands, from which large flocks of sheep had just been driven higher up in the mountains for fresher and better pasture. The land is nearly all well adapted to the cultivation of the vine and we have no doubt, will some day be covered with flourishing vineyards, and supporting a dense population of industrious people.

As we approached Chico, we began to ride through large grain fields—soon to be ready for the harvest. The grain is well headed and the berry plump, but the straw is somewhat uneven on the ground and not very heavy—showing plainly the effects of the past wet winter.

The grain crop of Butte County, we are assured by the best judges, will not be as heavy this as last year—still there will be a very good crop, and the farmers are all in the best of spirits. Having had a better crop last year than any other county in the State, and having obtained good prices, they do not feel like complaining now, and they certainly have no reason to do so.

General Bidwell's Farm.

Having brushed off the dust and eaten dinner at the Union Hotel, we accepted an invitation from general Bidwell to take a ride over his magnificent farm. This farm has been described so often by correspondents of the various newspapers of the State, that we shall only speak of some of the operations and enterprises that are being pushed forward on the place, very briefly.

The farm consists of 20,000 acres—all of which is under a good fence—and pretty well cut up into fields of from one to two thousand acres each, by equal division fences. Perhaps, there is no other one individual in the State, cultivating so many acres, engaged so extensively in the cultivation of so many varieties of products. General Bidwell is in every sense of the word, a general farmer. He does not, like many other extensive California producers, bend all his energies and means, to the produc-

tion of a single crop—wheat for instance—or to the raising of cattle—or sheep or horses. He raises almost everything that is cultivated in California, and his operations in each, are on a large scale.

The Vineyard—Raisins.

The General being strictly a temperance man does not propose to cultivate the grape for wine or brandy—this he will leave for others. Still he has some 75,000 vines on the high rolling land at the upper end of his place, and proposes to keep on planting until his vineyard will cover from one to two thousand acres. The land is well adapted to the vine, and is of but little account for any other purpose without irrigation. The varieties of grapes cultivated have been selected with a view to the production of raisins, a large proportion being the Muscat of Alexandria. It is his intention to enter very extensively into raisin culture, and to insure success the General expects to visit Spain this fall and gather all the necessary practical information, and import an experienced raisin producer to take charge of this special department. The enterprise is a very important one, and we hope and trust it will be made a success. California ought, and we believe will at no distant day, supply the whole United States with raisins.

Wheat and Barley.

There are about 2,000 acres of wheat on the farm, and 1,000 acres of barley and oats. Of all the wheat we have seen in our travels, that growing on this farm is the cleanest of weeds, and the grain stands the evenest on the ground. This is the result of the perfect system of cultivation adopted by the foreman, Mr. Cochran. All the wheat land is plowed twice—once shallow in the early winter, when all volunteer weeds or grain have commenced to grow, and then again deep when what weed seed and grain had not previously sprouted has taken another start. The last time plowing the plows are gauged so that they run at an equal depth all the time, and great pains are taken that every inch of land is thoroughly plowed. In one field of 1,000 acres, the wheat heads seemed to be on an exact plane with each other, and the yield promises to be not much less than forty bushels to the acre, though wheat has been grown on this same land now seventeen years in succession. We name this latter fact to show the strength of the soil, but more particularly to condemn the practice.

The General assured us that he would not defend this kind of farming, and that he intended to continue it no longer. He would sow this old land in alfalfa and thus make it yield a larger profit than it has been doing from wheat, and put an adjoining field which had never been plowed into grain, and thus with the same labor increase the production all around.

A Big Yield.

We saw one piece of twelve acres of meadow which had just been mowed the second time this year. The first mowing in April it yielded forty-two tons, and the last fifty, thus making ninety-two tons of good alfalfa hay from twelve acres of land! It will probably be mown twice more, and may yield an equal amount. If irrigated it would undoubtedly yield more, thus making over fifteen tons of hay to the acre in one season.

Miscellaneous Products.

On this farm is one of the most extra size vegetable gardens in the northern portion of the State, in which are growing beets, carrots, parsnips, turnips, corn, potatoes, and nearly everything that California is capable of producing in that line, in great abundance and perfection—not only for the supply of the family and farm hands, but for sale in the town and mining towns, and camps of the surrounding mountains. Fruit also, of every description and in quantity, is also produced, generally; but this season the crop is very light, on account of the late frosts. A large dairy, of some 100 cows, making large quantities of butter for home consumption, and for sale, and furnishing a part of the food for the swine, of which there is some 400 head on the place, constitutes a separate establishment. A fine nursery is also carried on, under the supervision of an experienced nurseryman, supplying all the shade and forest trees for the planting in the orchards and on the lines of fields and streets. Shops and work-houses, in which are made and repaired nearly all the agricultural tools and machinery used on the place, form also a part of the farm establishment.

Indeed, we could continue to enumerate the facilities and conveniences connected with this farm; but space will not allow, and we will dismiss this notice, by saying that there seems to be

One Thing Lacking

In the way of stock. Col. Younger says—but I only partly agree with him, this one thing is, a good herd of thoroughbred Durham Cattle. No

man in the State is better fixed for breeding good cattle than General Bidwell. He should give California the distinction of having the best breed in the United States. With this remark, we will leave Bidwell's and transport the reader to the

Farm of the Walsh Estate.

When in company with Senator Kent, of Nevada, and Assemblyman De Haven, we went on Friday. This farm contains also 20,000 acres all under fence, and about 3,000 acres under cultivation in grain this year. It is now owned and managed by Mrs. Chambers, the sister of Mrs. Walsh, and her two sons, Joseph and Charles. Here we were also most kindly received and hospitably treated. Here the Colonel was perfectly at home. He found in Mrs. Chambers an old neighbor from St. Louis; and what, as we have before hinted, pleases him a "heap," a fine herd of

Short Horned Cattle.

As is well known, Mr. Walsh was one of the first importers of this stock into the State. And we think we may safely say, that no better blooded cattle have ever found their way into the State, than were brought here in an early day, by R. J. Walsh. Without any disparagement to other importations, or herds descended from other importations, we think we can truly say, that no other cattle have been a greater credit to the State, or have done more to convince our people of the many advantages of raising good blooded stock, than this same Walsh herd. Go where you will, in California, where thoroughbred and graded cattle are to be found in any number, and you will find their descendants holding a high position.

In consequence of the death of Mr. W. and some difficulty in settling up the estate, these cattle have not been exhibited at our State Fair for a number of years back, but they will again make their appearance there this year, and we predict that although they will meet with a much stronger competition than ever before—with opponents that are worthy of their metal, they will still maintain a high position of honor and make a desperate, and perhaps a successful struggle, for some of the higher premiums and sweepstakes. Though a very large number have been sold, this thoroughbred herd now counts 15 head of breeding cows, and 22 head of young heifers and hells.

Of graded cattle they have certainly the finest we ever saw, and their herd consists of 1,400 head. They will also exhibit some of these cattle at the State Fair to show what graded cattle are for beef and the dairy. Mr. Kent who knows of what he speaks, says there is no other breed of cattle in the State where the 4-year old steers weigh as much on an average as do the beef steers from this herd into from 150 to 200 lbs. This is an item for our beef raisers and they may profit by it. Having spent the day and night at Mrs. C's, we returned to Chico and spent Saturday among the farmers as we met them in town doing their week's business. If one wants to see evidences of agricultural prosperity let him stop in Chico on Saturday at this time of the year.

Peach Leaf Blight.

A correspondent asks our opinion of the blight upon the peach leaves this year, a disease known to most fruit growers as the "curl." Also whether any thing can be applied as a preventive and whether it will be likely to be a disease that will be continuous, to appear next year perhaps to the ruin of the trees.

We believe it to be no disease of the tree beyond the leaf itself. The peach tree is subject to but one really incurable disease, and that is the "yellows." This disease is easily disseminated, and always when budding is done from a diseased tree to a healthy one. Not so with the "curl;" we have tried the experiment of budding from a curl leaf tree to one free from the curl, and by displacing portions of the bark of a healthy tree and supplying its place with bark from a curl leaf tree; but in no instance, or by any possible treatment could the curl leaf as a disease, be disseminated or conveyed to one free from it.

We therefore place the seat or origin of the disease, just where the disease appears, in the leaf and nowhere else. Consequently we do not go beyond the leaf, or direct influences upon it, for the cause of the disease. No particular exposure, or situation, no apparent or peculiar condition of the tree seems necessary to induce the existence of the evil. It comes when it will and where it will. This leads us to believe that we should look to the effects of climate, or heat, cold and moisture upon the leaf organization. We shall continue our remarks on the curl leaf in a future number.

BLOODED STOCK.—Robert Beck of Sacramento, well and favorably known as the Recording Secretary of the State Agricultural Society, and completely posted in all matters pertaining to the growth and qualities of fine stock, has been induced to enter into the business of receiving consignments of all manner of fine blooded farm stock, which he will sell at reasonable rates, giving guarantee of quality and pedigree. His advertisement contains a more special notice.

White Sulphur Springs.

When summer, which is anxiously awaited in most other climes, comes to the citizens of San Francisco, it is the signal for those who can afford the time and money, to wend their way to some of the numerous watering places to get rid of the hot mornings and still more disagreeable windy, dusty and foggy afternoons. The majority of the Eastern cities have their heated terms, when to be in town is to be out of the world for the aristocratic portion of the community; but here in the metropolis of the Pacific Coast we rather seek a warmer climate for a change and at the same time shun the winds, and are enabled to enjoy a hot day in some rural retreat far from the hum and bustle of the city. Fortunately, Californians can have almost any climate they desire and at any time of the year, without going out of the borders of their own State; and to a stranger this variety seems somewhat remarkable, especially when so great a change can be seen in a comparatively short distance.

The watering places are in their glory at this time of the year and the country is filled with city visitors in pursuit of pleasure, change and recreation. Among these places of resort, the White Sulphur Springs of Napa County hold a prominent position both on account of their being easy to get to from San Francisco and the beautiful scenery, fine climate and the reputation of the waters. Our correspondent, "L. P. Mc.," who has recently made a trip in that direction, has furnished us with a few notes to accompany the illustrations given herewith.

How to Get There.

The Springs are situated in Napa County, eighteen miles distant from the County seat in a romantic cañon, fifty seven miles from San Francisco. They are two miles west from St. Helena, at which point a stage line communicates with the Springs. The tourist takes the steamboat at Broadway Wharf either at 7.30 A. M., or 4. P. M., and is landed at Vallejo in an hour and a half or two hours, where he takes the cars for St. Helena via Napa; fare, \$3. From St. Helena by stage or hack over a short but beautiful road to the Springs, two miles; fare, 50 cents. Another drive to the Springs from St. Helena, may be taken by what is known as the Avenue, which goes direct south one mile; then west one mile; then north one mile; and then a little northwest half a mile, meeting the main road. This road is frequently taken by private teams on account of the beauty of the route. The last 2½ miles runs through a wooded country beautifully studded with residences and vineyards, and the avenue is entirely shaded by the thick foliage overhanging it. The fine residences of Dr. G. B. Crane, G. Backus, John Lewelling, and a number of other places in course of construction are passed on the way.

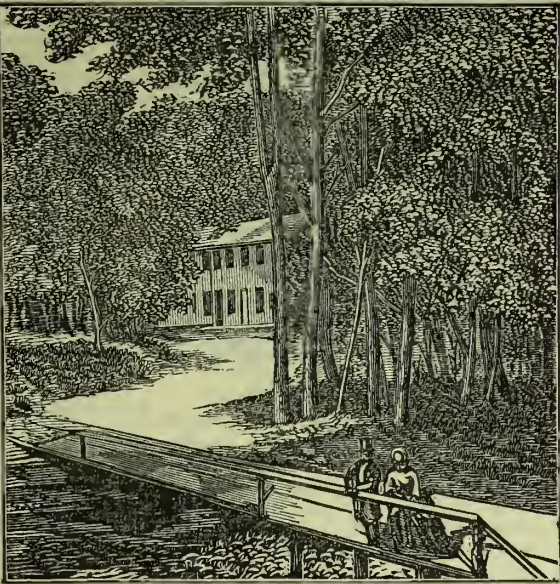
The Hotel and Cottages.

The cut shown in the centre of the page is a faithful representation of the hotel, which is kept by Mr. S. Alstrom, and which affords all the comforts to be found inside of San Francisco. The table is well kept, the rooms airy, and the beds clean and inviting. There are pleasant walks and shady retreats. A number of cottages and buildings serve to make quite a pretty little picture of rural scenery. The charges here are reasonable, and one may either live in the main hotel or in a cottage as he desires. The accompanying cuts represent a few of these cottages, which serve to show the beauty of the situation of the Springs and arrangement of the accommodations.

The Surroundings

Of the place are all that could be wished for by

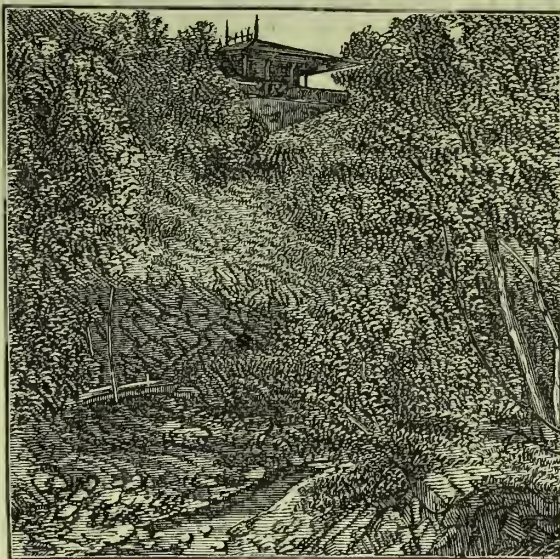
any one seeking for a quiet retreat, a pleasant climate and beautiful scenery. The hills around are covered with foliage and invite one to a walk to enjoy the shade in midday, or in the evening to lie under the spreading branches and dream away the "cares" that infest the



THE ALHAMBRA.

day." From the top of Columbine Hill, the manzanita path leads to Madroña Hill, 800 feet above the hotel. A little further on to the right this ridge raises 50 feet more and

springs, the water from which, like most medicinal and mineral waters is unpleasant to the taste, but a short sojourn at the place accustoms one to their use so that he really enjoys the flavor. We give herewith the analysis of the waters, which was made by Professor John



THE VANDERWATER COTTAGE.

Le Conte, of the State University. All of the springs contain essentially the same ingredients in the variable proportions. The low sp. gravity of the waters of the springs,

are either hot or warm. The temperature of Spring No. 1 (97¼° F.) is nearly the same as that of Bagnères in France, Aix in Savoy, Baden near Vienna, and others. The notable difference in the temperature of the several springs depends, probably, upon the greater or less abundance of the flow of water. It will be noticed that those furnishing the largest supply of water, as Nos. 1, 2 and 6, have the highest temperatures. If a large quantity of water could be diverted into any one of the springs, the temperature would, probably, rise up to blood heat. The department of mineral waters containing free sulphuretted hydrogen is of some interest in relation to their use. The characteristic odor of such waters is well known. They are usually clear when first taken from the spring; but when kept in a vessel containing air, sulphur separates in the course of eight hours or more, the fluid turning turbid, or depositing a whitish precipitate, whilst the smell of sulphuretted hydrogen becomes fainter. After longer exposure

the continued action of the air generally oxidizes the separated sulphur, converting it into sulphurous acid, which dissolves, leaving the water again clear, as at first.

Quantitative Analysis of Waters.

	Spring No. 2.	Spring No. 6.	Spring No. 7.
Temperature of Water of Spring in August, 1871.....	32° C. 89° F.	30° C. 86° F.	21° C. 69° F.
Specific Gravity of Water.....	1.00026	1.00040	1.00038

ONE WINE GALLON, OR 231 CUBIC INCHES, CONTAIN :

SOLIDS.	Grains.	Grains.	Grains.
Carbonate of Lime.....	1.25	2.44	5.56
Carbonate of Magnesia.....	0.62	0.56	4.36
Sulphate of Soda.....	8.26	11.33	12.84
Chloride of Sodium (common Salt).....	21.72	23.41	14.23
Chloride of Calcium.....	1.32	0.86	0.78
Chloride of Magnesium.....	0.87	2.22	0.65
Sulphides of Sodium & Calcium	2.65	1.85	1.62
Total.....	36.69	42.67	40.04

GASES.	Cubic Inches.	Cubic Inches.	Cubic Inches.
Sulphuretted Hydrogen.....	6.15	4.25	Trace.

QUALITATIVE ANALYSIS OF OTHER SPRINGS.

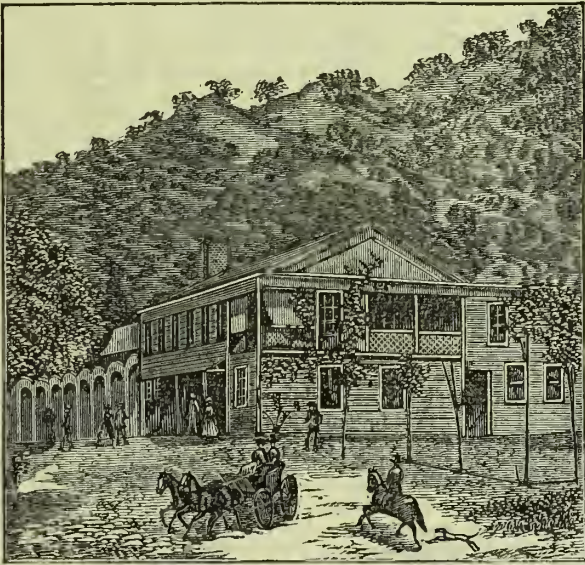
	Spring No. 1.	Spring No. 3.	Spring No. 4.	Spring No. 5.	Spring No. 8.	Spring No. 9.
Tem. in Aug. '71.....	36° 25' C. 97° 25' F.	26° 5' C. 79° 7' F.	24° C. 75° 2' F.	24° 8' C. 76° 64' F.	18° C. 64° 4' F.	20° C. 68° F.
Spec. grav. of Water.....	1.00010	1.00012	1.00023	1.00038	1.00018	1.00023
SPRING CONTAINS.						
Car. Lime.....	"	"	"	"	"	"
Car. Mag.....	"	"	"	"	"	"
Sul. Soda.....	"	"	"	"	"	"
Chlo. Sod.....	"	"	"	"	"	"
Chlo. Cal.....	"	"	"	"	"	"
Chlo. Mag.....	"	"	"	"	"	"
Sul. Soda.....	"	"	"	"	"	"
Sulphur'd Hydrog'n.....	Trace.	"	"	Trace.	Trace.	Trace.

In consequence of the changes induced by the action of the air, in order to secure the full benefit of sulphur waters, it is essential that they be taken at the spring or very soon after withdrawal from the fountain. In slow-running springs, as numbers 3, 7, 8 and 9, nearly all the sulphuretted hydrogen seems to be removed by the action of the air; the sulphur of this gas being replaced by sulphuric acid.

In conclusion, it might be proper to say that, by operating upon very large quantities of water, it is probable that other ingredients, existing in exceedingly minute quantities, might be detected; but they would be of no importance as far as the medicinal qualities of the water are concerned. It is also possible that the proportion of the solid constituents may vary with the wetness or dryness of the season; but these variations would be within such narrow limits as to exercise no sensible influence upon the virtues of the waters.

Old age is the verdict of life; if the old age is seemly, the life has been virtuous; if unseemly, it has been vicious.

A THING of beauty is a joy forever.



THE HOTEL.

is called Prospect Hill. From this point, as its name implies, a splendid view is obtained. On the south side there are a number of points of interest. You go by the Alhambra Path to Sentinel Rock, and further on is Gate Rock, Mossy Nook and Philosophers' Re-

as well as the results of analysis, indicate the presence of comparatively small amounts of saline materials. They are, therefore, peculiarly sulphurous waters, belonging to the light class. The quantity of sulphur in the waters for all medical purposes, being fully equal in

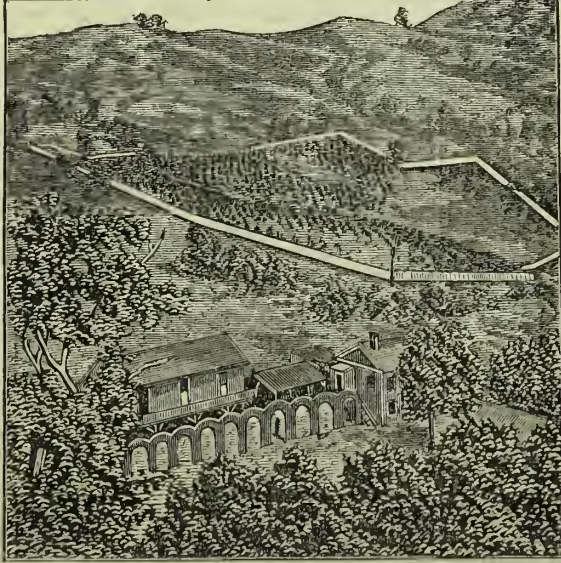


THE BRIDGE.

treast. At a place on the ridge, 946 feet above the hotel, another fine view presents itself, and one can see from here the mountains in the distance, the Sonoma Valley, and even San Francisco.

Analysis of the Waters.

The waters are said to be beneficial in cases of rheumatism and numerous other afflictions which flesh is heir to. There are nine of the



THE LAUNDRY AND VINEYARD.

strength to some of the most celebrated sulphur waters of Europe and this country; those of Aix in Savoy; of Bagnères in France; of Harrogate in England; of Moffat in Scotland; of Sharon in New York; of the White Sulphur Springs in Virginia, and others.

Most of the sulphurous waters of Great Britain are cold, but the greater number of the most famous springs on the continent of Europe



A Brighter Day To-Morrow.

Dark cloud-folds hang above us,
And swift the cheerless rain,
Comes down upon the forest,
And hill, and vale, and plain;
It whirls in furious surges
Against our loved retreat,
And tramples our sweet blossoms
With rude, swift-flying feet;
Yet still we will be joyous
Nor care or trouble borrow,
But hope and trust there'll surely be
A brighter day to-morrow.

So, when our lives are darkened,
And clouds of ill hang o'er,
We'll never fear God's sunlight
Will fall on us no more;
We'll never think that pleasure,
And Love, and Joy are dead,
And Peace, and sweet Contentment
Forevermore have fled.
We'll put our trust in heaven,
And in our tearful sorrow,
Still hope and pray our eyes may see
A brighter day to-morrow.

Brave brother, art thou weary?
Sweet sister, art thou faint?
And is thy life path dreary?
I've heard thy spirits, plaint,
And bid thee now be hopeful
And joyous once again;
Oh! never, never mourn,
Repining all are vain;
Let nothing daunt thy spirit,
Nor give thee lasting sorrow;
But hope and trust there'll surely be
A brighter day to-morrow.

Floating or Rowing.

We float too much, and we row too little. It is floating, instead of rowing, which draws us on and on to habits of indolence, unthrift, helplessness. "I couldn't help it," "I can't," simply mean floating. "I can," and "I will," mean rowing. A young man starts out in life resolved on having an easy time. He keeps this as he keeps no other resolution. He shuns real work, and seeks a position as bartender in a drinking saloon, or as a stage or carriage-driver, so that he can ride rather than walk; or he seeks a situation as keeper of a toll-gate—it is not hard work to tako and make change, you know; or, failing in this, he will offer his services to exhibit a horse, a machine, or take a situation in the custom-house, where the duties are light, hours short, and pay enough to keep him in liquor, tobacco, and second-hand clothing. He is not always expected to pay his board, for is not his "society" an ample equivalent for what he eats, and a place to sleep? He sings songs, plays on a fiddle, tells stories, and is entertaining.

When rallied as to what he intends to do in the future, he replies: "I have nothing in view;" or, "business is dull—there is no work to be done; but if there were ever so much, the pay is very poor, and, while the 'old man' has anything left, I prefer to stay with him—I may as well have it as any one."

"But do you not intend to marry and have a home of your own?" "No; I can scarcely support myself, to say nothing of supporting a family."

Poor fellow! What will he do for a home, when the old folks depart? He has learned no trade, knows little or nothing of business, and is floating on toward the poor house.

The young man who starts out in life intent on "working his way up," expects to climb hills, overcome difficulties, endure defeats, suffer reverses, and row against tide, currents, and breakers. But he will never float. He hears the roar of the cataract in the distance, and exerts himself to keep clear of it. It is the lazy, floating boatman who is carried over!

Parents owe it to their children to wake up, call out, and develop the latent powers with which they are endowed. We grant that the first duty, or business, or privilege of childhood is to grow—to grow bodily, rather than to overtask their brains or nerves. Still, they may—must—be trained to use their faculties, in order to make headway in life. Over-indulgence is as fatal as over-work. Every boy and every girl should be thoroughly impressed with the fact that self-helpfulness is a duty; that idleness is a sin.—*Phrenological Journal.*

Canaries.

In choosing a canary, recollect that yellow or white-bodied birds are considered the handsomest. The wings, tail and head should be yellowish dun. As relates to song, those birds are the most valuable that have not only their own notes, but some of those of the nightingale and the wood-lark.

Do not be entrapped into buying a female instead of a male. The female hardly sings at all. As a general rule you may know the male bird by his being rather larger and higher in the shanks than the female. The male canary is of a brighter color than the female, especially around the eye.

The usual length of the canary should be about five inches, of which the tail may measure two and a quarter. The bill should be about five lines in length, strong, sharply-pointed, and inclined to white. The feet and shanks, as they are called, should be eight lines long (or high), and of flesh color.

The head of the male is rather thicker than that of the female, the body in general throughout more slender.

The best food is the summer rape seed, which is sown in spring, distinguished from the winter rape seed, which is sown in autumn, and is larger and blacker than the former. They should occasionally have intermixed some crushed hemp seed and canary seed, especially in the spring. As a treat, they may have a mixture of summer cabbage seed, whole oats or oatmeal, with millet or canary seed. Here, as in everything else, we strive to imitate nature. With this simple mode of treatment, I have reared numerous canaries, and kept them healthy for many years; whereas others, who have attended theirs with the greatest labor and care, have incessantly complained of all kinds of vexations and unfortunate casualties. At moulting time a rusty nail should be placed in their drinking vessels.

T. BUCHANAN REED.—The subject of this sketch was born in Chester county, Penn., March 12, 1822, and had accordingly just completed his fiftieth year. He went to Cincinnati at the age of seventeen, and entered upon the study of sculpture with that zeal which characterized all his endeavors after artistic excellence. He soon turned his attention to painting, and executed portraits of Gen. Harrison and other eminent men, which were regarded as highly successful. In 1841 he went to New York, where he became a contributor to magazines. Thence he removed successively to Boston and Philadelphia. In 1848 he published a column of extracts from the works of the female poets of America, though still working as a painter. He made two visits to Europe, returning to this country early in the year. His artistic talent met with recognition abroad, as well attested by his portraits of the Pope, the Queen of Naples and other high personages, while his "Lost Pleiad" and "Harp of Erin" were bought for the cabinets of European collectors. Some of the best specimens of his skill are also in possession of Cincinnatians. An ardent patriot, Mr. Reed glowed with sympathy for his country during the rebellion, and his "Sheridan's Ride," a poem written to be read by M. Murdoch, was creditable to his loyal zeal to his literary skill. He afterwards embodied his conception of the "ride" in a painting. His poetical fame will rest chiefly on his "Wild Wagoner" and "Sheridan's Ride," though some of his other pieces are exquisite in refinement of thought and expression. His "Closing Scene" especially has been placed by a foreign critic among the finest of American poems. He was twice married, but, if we are not mistaken, his children all died before him.

OUR FUTURE LEGISLATORS.—The men who are working at the boiling furnaces and rolls, in the machine shops and factories, on the farms and among the hills, will in ten or twenty years be our legislators, leaders and capitalists. All men can labor but all cannot save. Those who save and use their savings to the best advantage will be the men to stand in the front rank. Those who do not will live and die and be forgotten like the horses that haul the iron they make, or the produce they grow. To eat and drink and sleep and work is not all of life. The urgency of these wants blind the true objects of living. There is room in the world for all the good, industrious and thinking men that can lift themselves above the common level of humanity.

A HINT FOR THE GIRLS.—A wood engraver being asked why he did not employ women, replied: "I have employed women very often, and I wish I could feel more encouraged. But the truth is, that when a young man comes to me and begins his work he feels that it is his life's business. He is to cut his fortune out of the little blocks before him. Wife, family, home, happiness, are all to be carved by his hand, and he settles steadily and earnestly to his labor, determines to master it, and with every excitement spurring him on. He cannot marry till he knows his trade. It is exactly the other way with the girl. She may be as poor as the boy, and as wholly dependent upon herself for a living, but she feels that she will probably marry by and by, and then she must give up wood engraving. So she goes on listlessly; she has no ambition to excel; she does not feel that her happiness depends on it. She will marry, and then her husband's wages will support her. She may not say so, but she thinks so, and it spoils her work."

NEVER COMPLAIN.—Never complain of your birth, your training, your employment, and your hardships. Never fancy that you could be something if you only had a different lot assigned you. God understands his own plan, and he understands what you want a great deal better than you do. The very thing that you deprecate as fatal limitations or obstructions, are probably what you most want. What you call hindrances, obstacles, discouragements, are probably God's opportunities; and it is nothing new that the patient should dislike his medicines or any certain proof that they are poisonous. No; a truce to all such importance. Check that devilish envy which gnaws your heart because you are not in the same lot with others; bring down your soul, or rather your lot, in your sphere, under your obscurity, against your temptations, and you will find that your condition is never opposed to your good, but really consistent with it.

HOW TO ENJOY LIFE.—It is wonderful to what an extent people believe happiness depends on not being obliged to labor. Honest, hearty, contented labor is the only source of happiness, as well as the only guarantee of life. Idleness and luxury induce premature decay much faster than many trades regarded as the most exhaustive and fatal to longevity. Labor in general actually increases the term of life. It is the lack of occupation that annually destroys so many of the wealthy, who, having nothing to do, play the part of drones, and, like them, make a speedy exit, while the busy bee fills out its day in usefulness and honor.

Let young people heed the above facts, and remember that industry—labor—is not only requisite to success in any calling, but also the great source of health and happiness.

MAN'S LOVE.—Every man's life; practically speaking, is shaped by his love. If it is a downward, earthly love, then his actions will be tinged by it, all his life will be as his reigning love. This love, you perceive, is not a mere sentiment, or casual emotion, but is the man's settled affinity; it is that which is to his character what the magnetic force is to the needle, the power that adjusts all his aims and works, and practically determines the man. It only must be a downward love, or an upward love; for being the last love and deepest, it must be one or the other. And then, as his love changes, it works a general revolution on the man.

DAUGHTERS OF THE RICH.—No class of women are more to be pitied than the daughters of rich men, who having real force and energy of character, have no vent for it, because fashion requires them to sit still and fold their hands. We never can know how many real heroines are behind this wall of restriction, till what is called "adverse" fate sets them free to stand upon their own feet, and use their own hands, and know their own powers, which have been dwarfed by inaction.

THE FINEST VIEW.—According to the State Geologist of California the view from the top of Mount Diablo is the finest in the world, not excepting any of the Alps.

CALIFORNIA contains a larger number of foreigners, proportionately, than any other State in the Union. The census shows 336,393 natives and 309,839 foreign born.

THE Great Wall of ancient Babylon was about 100 feet thick, and 400 high. It enclosed an area seven times the present size of Paris.

Young Folks' Column.

Fixing for Grandma.

We're fixing up for grandma,
She's coming here to-day;
We'll have to hurry, Bennie,
I 'spect she's on the way.
You run and bring some wood in
And put it on the fire;
I'll get the biggest turkey-wing,
To make it blaze up higher.

And now we'll bring the rocking-chair
And the cricket for her feet,
And on the little table
Put something nice to eat;
And when she comes, we'll make her
A splendid cup of tea!
Oh dear! I hear somebody,
I'll have to run and see.

There she is, O, Bennie!
Let's meet her at the gate!
You needn't mind your mitten's—
I can't begin to wait.
I'll take your basket grandma;
Did it tire you much to ride?
It seems to me it smells good,
I wonder what's inside!

A Charade.

My first is a small folding bed,
For more use than beauty designed;
My second expresses a weight,
A heavy weight, too, you will find.

My whole—though is not a "King,"
Has truly, at present, great power;
'Tis a plant which, perhaps, you now wear,
But was once in the field a bright flower.

Atlas Puzzles.

(STATE OF NEW YORK.)

A useful article on a door, and a navy term.

A girl's name.

A wild animal.

A domestic animal and the crossing of a brook.

A German name for children and a useful article when fishing.

A fruit and a plane between two mountains or hills.

(STATE OF PENNSYLVANIA.)

The name of a banker in San Francisco.

A musical instrument.

An animal having precious fur.

A vehicle of conveyance and a proper name.

A color and an ancient building.

One of the seasons and a position of rest.

The name of one of the Presidents of the United States.

A vessel and a writing utensil.

The Little Girl and Her Copy.

A little girl went to writing school. When she saw her copy, with every line so perfect, "I can never write like that," she said.

She looked steadfastly at the straight round lines so slim and graceful. Then she took up her pen and timidly put it on the paper. Her hand trembled; she stopped, studied the copy, and began again. "I can but try," said the little girl: "I will do as well as I can."

She wrote half a page. The letters were crooked. What more could we expect from a first effort? The next scholar stretched across her desk, and said, "what raggedy things you make!" Tears filled the little girl's eyes. She dreaded to have the teacher see her book. "He will be angry with me and scold," she said to herself.

But when the teacher came and looked, he smiled. "I see you are trying, my little girl," he said kindly, "and that is enough for me."

She took courage. Again and again she studied the beautiful copy. She wanted to know how every line went, how every letter was made. Then she took up her pen and began to write. She wrote carefully, with the copy always before her. But O! what slow work it was! Her letters straggled here, they crowded there, and some of them looked every way.

The little girl trembled at the step of the teacher. "I am afraid you will find fault with me," she said, "my letters are not fit to be on the same page with the copy."

"I do not find fault with you," said the teacher, "because I do not look so much at what you do. By really trying, you make a little improvement every day; and a little improvement every day will enable you to reach excellence by and by."

"Thank you, sir," said the little girl; and thus encouraged, she took up her pen with a greater spirit of application than before.

DOMESTIC ECONOMY.

The Family Table.

Of all the familiar features of the family there is none that possesses a greater interest or greater capacity of contributing to the household happiness, than the table. It is the prime unit—the first and chief prompter of that unity which makes the family the integer of human organization. It wields a more than patriarchal authority. The father's commands may be forgotten; the mother's wishes thoughtlessly disregarded, but with its white cloth, the table is a power which is never resisted or slighted.

The members of the family may be scattered in different places—some at the counting house, some at the work shop, some in the forest, in pursuit of pleasure or duty. The magic of the white cloth reaches them wherever they are, and its mute invitation summons them home. And even when the family is shattered to fragments and scattered over the whole earth—when each departing member has become the head of a different family, that unforgotten picture of a white cloth and the tea-urn will still assert its power, and gather the wanderers from the distant land to joyous thanksgiving under the old roof tree.

The family board should be honored of all, where churlishness, coldness, silence and frowns should have no place. It may be made thrice a day the scene of a festival richer and rarer than picnics in wooden groves or sumptuous feasts in gilded saloons. Its offering may be frugal and humble—but no matter; better is its dinner of herbs, if flavored with love and spiced with vivacity, than the rich courses of a grand hotel, where strange hundreds swallow and gulp amid a clatter of dishes, regardless of each other's presence, or the weary and monotonous meals of the boarding house, where the people knew each other too well to be entirely reserved, and too little too familiar. Each assemblage round the family table has its peculiar charm, and each may be made a feast.

The table is no place for stiff dignity, or austerity. Biting bread and butter, and taking soup from a spoon may be done pleasantly and gracefully; but to infuse dignity and stiffness in the operation is inexcusably ridiculous. Hunger is a leveler, and eating and drinking is one of the most delightful pleasures. No one has a right to disguise the innocent satisfaction of it at the family board, by the affectation of an exemption from so human a weakness as an appetite or disdain of the viands set before him. The pleasantest family pictures are those cheerful dining-room assemblages, where father, mother, brother, sisters eat and drink cheerily, as though it did them good, and cloth, urn, dishes and spoons seem to look happy in general joy.

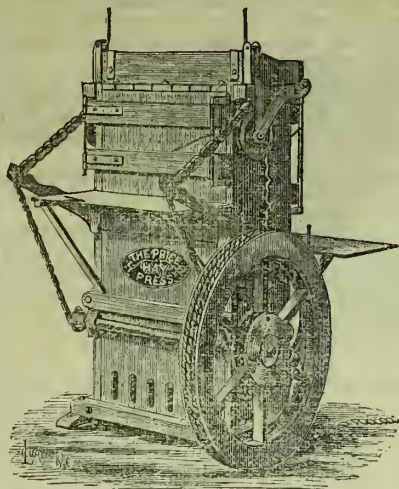
TO COLLECT THE ODORS OF FLOWERS.—Roses, and all flowers containing perfumed oils, may be made to yield their aromatic properties by steeping the petals or flower leaves in a saucer or in a flat dish of water, and setting it in the sun. The petals should be entirely covered with the water, which, by the way, should be soft or rain water. A sufficient quantity should be allowed for evaporation, and the vessel should be left undisturbed a few days. At the end of this time a film will be found floating on the top. This is the essential oil of the flower, and every particle of it is impregnated with the odor peculiar to the flower. It should be taken up carefully and put in tiny vials, which should be allowed to remain open till all watery particles are evaporated. A very small portion of this will perfume glove-boxes, apparel, etc., and will last a long time.

TO CLEANSE A STOVE PIPE.—Raise up the bottom of the pipe, where it is attached to the stove, and burn it out by inserting half a newspaper saturated with coal oil, and the soot will give very little trouble. A pipe more than twenty feet long is thus cleared out in an instant. It should be done when there is very little fire. In burning wood a large quantity of water settles in the pipe, especially, if the weather is very cold, and the pipe is horizontal. Thus water sometimes mixes with the soot and forms a paste, which is often troublesome and cannot be burned out as above. In such cases, the only way is to take the pipe down and release it by slightly thumping the pipe in the usual way.

PICKLED ONIONS.—Choose the small, white round onions, take off the brown skin, have a stewpan of boiling water ready, and then throw in as many onions as will cover the top; as soon as they look clear on the outside, take them up as quick as possible with a slice, and lay them on a clean cloth, cover them close with another, and scald some more and so on. Let them lie to be cold, then put them in a jar, or glass, or wide-mouthed bottle, and pour over them the best white pickling vinegar, just hot, not boiling. When cold, cover them; should the outer skin shrivel, peel it off. They must look quite clear.

DRYING BEEF.—It is stated that flies can be kept from beef hung up to dry, in warm weather, by the use of black pepper. Heat a shovel red hot and sprinkle the pepper upon it. The smoke will rout the flies at once. Follow this up three or four days, as occasion may require, and the flies will give it up.

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(Sometimes called the Petaluma Press.)

Bales twice as fast as any other in the world.

Frequently bales over

Twenty Tons Per Day.

NEARLY 300 IN USE IN THIS STATE.

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Their wonderful capacity is due chiefly to the fact that they are not set up on stilts, with the machinery in the bottom, like every other Power Press in the United States, but the box for the reception of hay extends from the top of the Press clear down to the ground, thus giving room in a low, small Press, for a large bale.

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SIZE AND QUALITY.	HIGHT OF PRESS	WEIGHT OF BALE.	WEIGHT OF PRESS.	AVERAGE CAPACITY PER DAY.	PRICE AT SAN FRAN.
No. 1, Hardwood door timbers..	7 feet.	200 lbs.	2000 lbs.	13 tons.	\$300
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No. 4, nearly all hard wood....	8 ft. 8 in.	300 lbs.	3000 lbs.	17 tons.	\$500

These Machines are sold without discount, and for CASH ONLY.

Address the
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Monuments, Headstones, Tombs,
MANTEL PIECES, ETC.,

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21v2-1v

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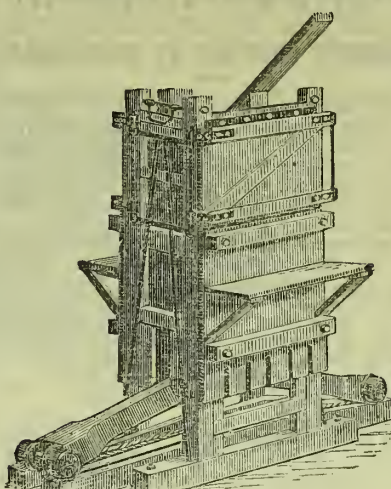
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THE EAGLE HAY PRESS.



Eagle Hay Press,

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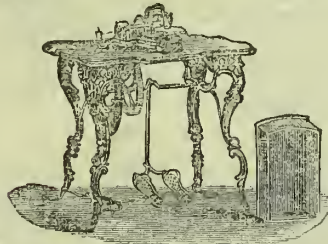
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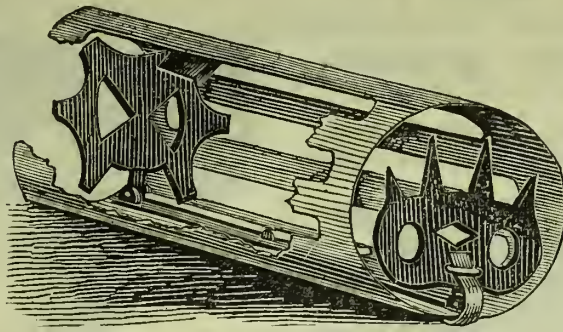
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By order.

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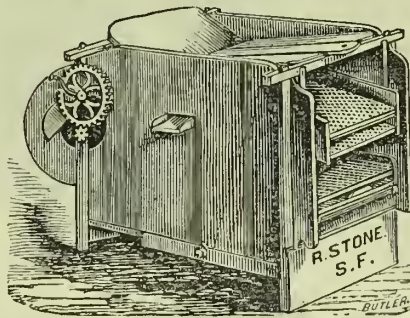
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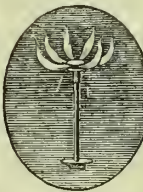
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The flame is as white as city gas, and produces no smell or smoke. One Burner is equal to Six Candles, and COSTS ONLY ONE CENT PER HOUR.

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CONTENTS.

Beater, care of; Belt Protector, Hollihan's (Illustrated); Belts, Management of; Cracking of Grain; Cylinder, How to balance; Cylinder, Movement of; Cylinder, Motion of; Engineer's Duty; Geared or Belt Machines; Gears, Management of; General Management; Horse Powers; Horse Power, Moving a; Introductory Remarks; Machines; Machines, Management of; Machines, Moving them; Management, General; Rake, Speed of; Shoe, the; Shoe, Improved; Shoe, What it is; Sieve, New Jointed (Illustrated); Stacking Wheat; Steam Powers.

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It will be to the interest of the Farmers of California to know that D. M. Osborne & Co., of Auburn, N. Y., manufacturers of the

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Corner Clay and Davis streets, San Francisco.
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The following are some of the reasons why these Plows are entitled to preference over any other Plow in use. They are made of the best material, and every Plow warranted. They are of light draught, easily adapted to any depth, and are very easily handled. They will plow any kind of soil, and leave the ground in perfect order.

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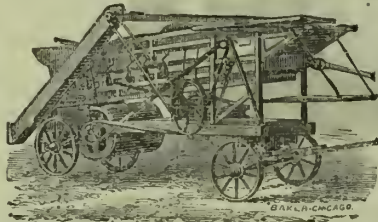
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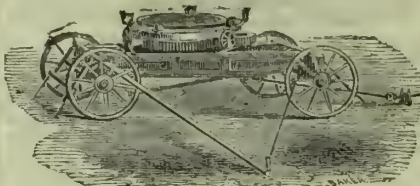
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Grain-Saving, Time-Saving, Money-Making
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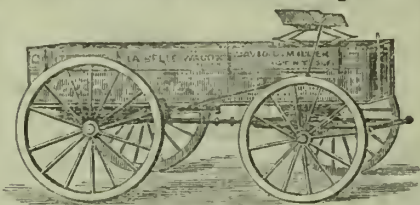


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3 in Thimble Skein..	\$120	3 in Running Gear..	\$90
3 1/2 " " " "	125	3 1/2 " " " "	95
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Above prices include Box and Top-Box, Spring-Seat, Brake, Double and Single-Trees, Stay Chains, Neck-Yoke and Wrench. Racks with California Brakes, in lieu of Boxes, \$5 additional.

All sizes of Wagons with Boxes, Brakes and Spring Seats, or without. All Wagons are manufactured to my order for this coast, and are warranted for two years in any climate, and will be delivered on board of any boat or railroad cars free of expense to the purchaser.

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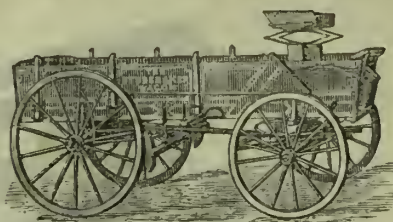
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GOOD PROPORTION,
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They Have no Peer.
IRON AXLE,
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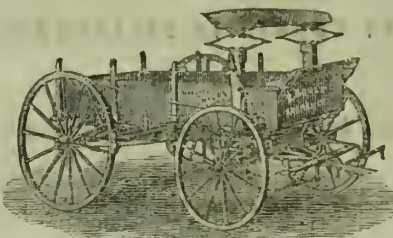
Of all sizes, with HEAVY TIRES riveted on, always on hand and sold for \$100 to \$165.

Having established a MANUFACTORY to build WAGONS, BEDS, BRAKES and SEATS, I am better prepared than ever to furnish

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As I make a SPECIALTY of the WAGON TRADE.

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With neither Engine, Piston, or Pinger.

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FOR RAISING WATER FROM WELLS.
BALL & CRARY, Patentees.



The inventor claims that his ELEVATOR excels any other apparatus that has ever been brought before the public for the purpose of raising water from wells. Its chief merits are: First—The water is obtained from the well in a purer and colder state, for the reason that it is drawn from near the bottom. Second—It is operated with the least difficulty, particularly in lifting a certain amount of water from any depth in a given time, as compared with any other mode. Third—It obviates all necessity for going down into the well in putting in the machinery, or for repairing the same, as such labor can be performed at the surface. Fourth—It can be easily taken out of one well and transferred to another. Fifth—It is less liable to get out of repair—but when repairs are necessary they can be easily made by any one; the action made by the Endless Chain and Buckets keeps the well properly ventilated; there is no possibility for the person operating it [nor for a child] to fall into the well.

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IMPROVED NOISELESS
Family Sewing Machine
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It is the Most Simple,

Easy to run (a child can operate it), not liable to get out of order, sews the heaviest or lightest goods, and is remarkable for the great variety, perfection and durability of its work.

It is the only Machine

Making the triple-threaded seam, with the twisted loop stitch, the strongest and most elastic made.

The Willcox & Gibbs

Received the only honorable mention and strong recommendation at the last Stockton Agricultural Fair.

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Relieve the Draft of the Team,

Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as

LOW A RATE

As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

HUCKS & LAMBERT

Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.

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The best quality of Crystal is found in Scotland and the Brazils, and is manufactured into lenses by the best workmen in England and France, for

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Illustrated Circular for style of frames sent to any address free.

Pebbles sold as such by us, are Warranted.

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Each piece 50 cents.

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Price, \$1.50, is now in season. All who wish to make a noise in the world may easily accomplish it by taking up the practice of this fascinating instrument, with the aid of this excellent Method.

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The above collections of Vocal Gems contain each 200 to 250 pages full of the choicest German, Scottish, Sacred or miscellaneous songs. Very valuable, and very moderate in price.

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SEEDS of all kinds advised and furnished by application.

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MILLIONS OF PAIRS SOLD.

CABLE SCREW WIRE

BOOTS AND SHOES.

KNOWLES' PATENT STEAM PUMP.

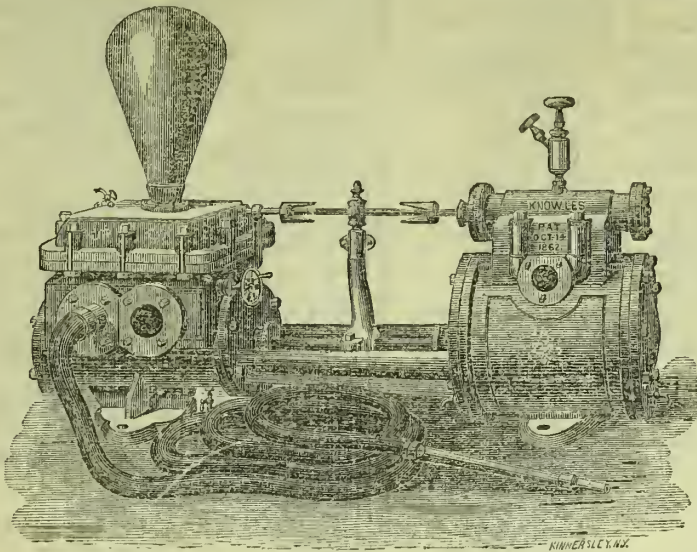
Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

v113-awhp

G. W. DICKIE,
CHAS. R. STEIGER,

W. EPPELSHEIMER,

H. B. ANGELL,
MELVILLE ATWOOD."

It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,
And for Every Conceivable Purpose.

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P. S.—All kinds of new and second-hand Machines on hand.

3v24-cow-bp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed) JAS. SPIERS, WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or last) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGELL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, all other assertions to the contrary notwithstanding. Hooker's Hand Pump was the only Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the last Exhibition, for which we are also selling agents—See official Report of the above Committee.]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California

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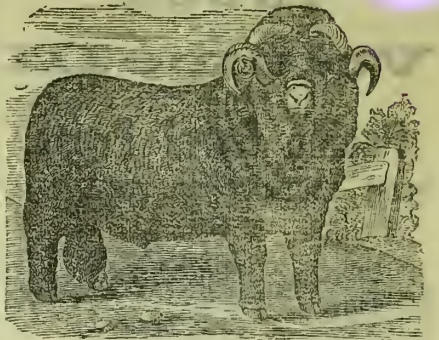
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